UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE ADMINISTRATOR

In the Matter of	)	
	)	
Smith Farm Enterprises, LLC	)	**Docket No. CWA-03-2001-0022**
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	)	
	)	
Respondent	)	

DECISION UPON REMAND

I. Introduction.

This Decision Upon Remand is issued in accordance with the Environmental Appeals Board Remand Order of October 6, 2006, which found that "the facts required to decide [the] matter using the [Clean Water Act] jurisdictional tests set forth in [*Rapanos v. United States Army Corps of Engineers*, 547 U.S. 715 (2006)] [were] either not present or not fully developed in the factual record before [it]. . . . [and consequently, it remanded the] matter to the [administrative law judge][1] to hear additional evidence as to CWA jurisdiction in light of *Rapanos* and to thereafter rule on the jurisdictional question . . . [and thereafter issue] a new initial decision. Remand Order at 5.

Smith Farm is approximately a 300 acre parcel[2] of unimproved land which straddles portions of the Cites of Chesapeake and Suffolk, Virginia. As set forth in the Initial Decision of Judge Carl Charneski's statement of the case, this matter involves "a civil penalty enforcement proceeding brought by the United States Environmental Protection Agency ("EPA') against Smith Farm Enterprises, L.L.C. ("Smith Farm"), for two violations of the Clean Water Act ("CWA" or "the Act"). *33 U.S.C. § 1251* et seq. In Count I of its First Amended Complaint, EPA charges that Smith Farm violated Section 301(a) of the Clean Water Act, *33 U.S.C. §*

[1]Subsequent to the Remand Order, Administrative Law Judge Carl Charneski took a judicial position with a different federal agency and the case was then reassigned to the undersigned administrative law judge to conduct the post-remand hearing proceedings.

[2]The parcel is comprised of nearly 100 acres of crop land, with the remainder described as forested or wooded.

1311(a), by discharging dredged and/or fill material into "wetlands" that are "waters of the United States," without a permit from the United States Army Corps of Engineers ("the Corps"), issued pursuant to Section 404 of the Act. *33 U.S.C. § 1344*. Alternatively, EPA alleges that respondent committed this Section 301(a) violation by discharging pollutants into "wetlands" that are "waters of the United States" without a National Pollutant Discharge Elimination System ("NPDES") permit, issued pursuant to Section 402 of the Act. *33 U.S.C. § 1342*. In Count II, EPA charges that respondent discharged storm water associated with construction activity without a Section 402 NPDES permit in violation of Section 301(a) of the Act. *Id.* EPA seeks civil penalties of $ 84,500 for Count I and $ 21,000 for Count II, for a total penalty of $ 105,500. *33 U.S.C. § 1319*(g)(2)(B)." Initial Decision ("ID")at 1-2.

This Decision upon Remand will first summarize salient points from the Initial Decision of Judge Charneski. Following that, it will discuss the Supreme Court's plurality decision in *Rapanos* and then apply that decision's different interpretations of the reach of the Clean Water Act to the findings made in the Initial Decision along with the additional findings made by this Court in light of the evidenced adduced upon remand.

II. Judge Charneski's Initial Decision

A. The wetlands determination

The Court takes note of the following findings of fact which are taken from Administrative Law Judge Charneski's Initial Decision, dated May 5, 2005. These findings of fact were not altered by the testimony received during the proceedings upon remand.[3]

Respondent, "after learning that nearby property owners were planning to dig "Tulloch" ditches[4] in order to remove wetlands from their properties, [] engaged the services of Robert Needham, an environmental consultant. Respondent sought to explore this possibility for itself. Tr. 222-223 (Vol. III). In that regard, James Boyd acknowledged the presence of wetlands on the

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[3]The Court has selected from Judge Charneski's Initial Decision those findings of fact that it considers particularly pertinent to this Decision Upon Remand. However, unless otherwise noted, these selections should not be interpreted as a rejection of the many other findings of fact from that Initial Decision. The scope of the remand was limited to taking additional evidence as to CWA jurisdiction in light of *Rapanos* and thereafter to rule on the jurisdictional question. Accordingly, subject to an express contradiction within this Decision Upon Remand, all of Judge Charneski's findings of fact remain intact. Subject to the foregoing, Judge Charneski's Initial Decision is incorporated by reference.

[4]"Tulloch ditches [*when done properly*] are ditches that are dug in wetland areas in order to remove the wetland hydrology from the site. . . . [thus] their purpose is to drain the wetlands. By removing the wetland hydrology the landowner may change the character of the property from wetland to upland." ID at 4.

property, remarking: "Apparently, it was an opportunity that, you know, admittedly people realized that if you were working in a wetland, that this opportunity may not be around forever."[5]

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[5]"Smith Farm retained Vico Construction Corporation to perform the Tulloch ditching. Stipulation 6 (June 13, 2002). Vico Construction, in turn, subcontracted the ditch excavation work to Paxton Contractors Corporation ("Paxton Contractors"). Tr. 219 (Vol. IV), 71 (Vol. VI). 23. The contract between Smith Farm and Vico Construction called for the construction of 12,350 linear feet of ditches and approximately 20,000 linear feet of "Kershaw Well Transect Lines." Tr. 78-80 (Vol. IV); RXs 12 & 13**.** ID at 6-7. The Well Transect Lines are to allow for the placement of monitoring wells. Monitoring wells are used to determine the effectiveness of the Tulloch ditches in removing wetland hydrology. Tr. 248-249 (Vol. I). ID at 7. n. 6."

"In preparation for the construction of the Tulloch ditches, Erosion and Sediment Control Plans ("E&S Plans") also were prepared for respondent. These E&S plans were drafted by Hoggard/Eure, an engineering firm. Separate E&S Plans were prepared for the Chesapeake and Suffolk portions of the Smith Farm site and were submitted to the City of Chesapeake [] and to the City of Suffolk, respectively. CX 44A (Chesapeake-side Plan) & CX 109 (Suffolk-side Plan). Both E&S Plans contain diagrams setting forth the location and size of the proposed Tulloch ditches, as well as the location of "check dams." *Id.* Check dams are intended to impede the flow of water and thereby reduce the risk of soil erosion. Tr. 42, 45 (Vol. II). In addition, the E&S Plan for the Chesapeake-side identifies the location of two proposed stockpiles where the material excavated from the ditches would be deposited . . ." ID at 7.

"Clearing the timber was only the first step in preparing the paths for the excavation of the Tulloch ditches. The second step was to clear the saplings and other woody debris (also known as "slash") left behind in the paths by Old Mill. This second phase was done by both Vico Construction and its subcontractor, Paxton Contractors. The purpose of this second phase clearing operation was to allow Paxton Contractors to get its ditch digging equipment (*i.e.,* the excavator and haul trucks) into the pathways. This second phase was known as "prepping" the paths. Tr. 157 (Vol. I), 73-75 (Vol. VI)."

"In preparing the paths, Vico Construction and Paxton Contractors used a grinding machine known as a "Kershaw." [] A Kershaw is a four wheel, rubber-tired piece of equipment which has a rotary drum. It is situated on a "timber skidder" which prevents the head from coming into contact with the ground. The Kershaw grinds up the woody vegetation into chips. These wood chips are then randomly distributed to the rear of the Kershaw. Tr. 229-230 (Vol. I), 190-192 (Vol. V), 73, 105 (Vol. VI)**.** ID at 9."

"Four Tulloch ditches were dug on the Chesapeake-side of the property. These ditches tied into a main ditch which ran through the middle of the property. Tr. 241 (Vol. IV). The Tulloch ditches dug on the Suffolk-side also are tied into a main ditch. Tr. 80-81 (Vol. VI); RX 36. ID at 10."

Tr. 256 (Vol. III). ID at 3-4. The ditches were constructed between November 1998 and early 1999. Martin. Tr. 386.

[Upon] inspecting Smith Farm [EPA established as] a reference point . . . an area of the Smith Farm site which had not been disturbed by respondent and, therefore, could be used to confirm the presence (or absence) of wetlands. ID at 15, citing Tr. 118-119 (Vol. I). Sample Point B was [such] an undisturbed area where there had been no removal of vegetative cover and soils. Tr. 124-125 (Vol. I). The EPA team concluded that Sample Point B was located in a wetland[6] . . . that the dominant vegetation at Sample Point B was wetlands vegetation [and that the soil was hydric]. In addition, the well-monitoring data contained in Complainant's Exhibit 25 showed this area to have wetland hydrology. Tr. 125-126 (Vol. I). ID at 16. . . . [Further,] Respondent's wetlands expert, Robert Needham, concurred that Sample Point B was located in a wetlands area as shown in Respondent's Exhibit 36. Tr. 21 (Vol. VI). *See* Stipulation 8 (September 8, 2003). ID at 16.

Judge Charneski found "that under the facts of this case the wood chips constitute fill material and that Smith Farm violated Section 301(a) by discharging this fill material without a Section 404 permit from the Corps . . . ." ID at 18-19.

"[I]n 1991, the previous owners of Smith Farm had requested that the U.S. Army Corps of Engineers make a jurisdictional determination. (Smith Farm Enterprises, L.L.C., did not acquire this property until 1998. Robert Boyd was, []however, one of these previous owners.) The 1991 property owners wanted the Corps to determine whether there were wetlands on the site that came under the jurisdiction of the Clean Water Act, and thus subject to the Section 404 permitting provisions. While the Corps determined that much of the forested portion of the site contained wetlands, the owners of Smith Farm withdrew their request for a jurisdictional determination before a wetlands delineation could be performed or confirmed by the Corps. ID at 4. Tr. 267 (Vol. I); CX 27."

"During this January 6 visit, Martin completed a wetland data sheet (containing information on wetland soil, wetland plants, and wetland hydrology) in a forested area on the site which he identified as "Plot ID 1." Martin determined that Plot ID 1 was in a wetland. Tr. 235 (Vol. I); CX 26. ID at 11. Martin did the same evaluation for an area that he identified as "Plot ID 3." This area was located 75 feet west of the eastern-most drainage ditch in a forested section on the City of Chesapeake-side. He concluded that Plot ID 3 also was situated in a wetland. Tr. 237 (Vol I); CX 26. ID at 11. Martin also visited the Smith Farm site on March 16, 1999, among other times. On March 16, he collected data points from the Suffolk-side of the property. CX 28. During this visit, Martin again identified the presence of wetland areas on the property. Tr. 250-251 (Vol. I). ID at 11."

[6]Sample Point B was located north of the largest east-west running ditch in the southwest quadrant of the Suffolk side of the property. CX 45, Figure 5 (Oct. 2003); CX 98 (Oct. 2003).

Judge Charneski also found that: "[i]t is undisputed that there are wetlands on the Smith Farm site [and that] Respondent admits as much [but contends that] the wetlands that are on the property are "isolated" wetlands and hence not subject to the provisions of the Clean Water Act. ID at 21. In fact, regarding the presence of wetlands, (and putting aside for the moment the issue of whether the wetlands were *isolated*), Judge Charneski took note that "the parties stipulated that as of September 8, 1999 (the date of the EPA inspection), the soils in the forested area of the Smith Farm site [were] predominately hydric soils, and that the predominant vegetation in this forested area [was] wetlands vegetation. (ID at 21, citing Stipulations 24 & 25 (September 8, 2003)). The parties further stipulated that some of the forested portions of the site in which the corridors were cleared of timber and woody debris, and in which the [attempted] Tulloch ditches were excavated, satisfied the wetlands parameters set forth in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (*Corps Manual*). Stipulation 26 (September 8, 2003). (ID at 21). Judge Charneski also stated: "the evidence presented by EPA establishes that there are wetlands on Smith Farm. This evidence consists of the testimony of Lapp, Stokely, Vasilas, and Martin (the EPA mapping, aerial of the Smith Farm site, soil sampling, and observations of predominant wetland in the forested A wetlands inspection team), which referenced National Wetlands Inventoryportion of the Smith Farm site. Stipulation 27 (September 8, 2003); CX 87, Fig. 3 & RX 34A. *See* Tr. 247 (Vol. I) & CX 26." ID at 21. Last, Judge Charneski observed that the "respondent's wetlands experts, Charles Wolfe and Robert Needham, conceded that the forested portions of the Smith Farm site contain wetlands. Tr. 213, (Vol. I), 9 (Vol. V), 20 (Vol. VI). Wolfe described these wetlands "as high elevation hydric soil flats." Tr. 11 (Vol. V). In addition, William Parker, respondent's soil expert, agreed with EPA's soil expert, [Ms.] Vasilas, that the Smith Farm site contains hydric soils. Tr. 198 (Vol. III). ID at 21." ID at 21.

B. Judge Charneski's analysis of the Smith Farm Site's "hydrological connection."[7]

Judge Charneski made the following statements on the issue of the Site's hydrological connections:

"It is undisputed that the wetlands involved in this case are adjacent and contiguous to water bodies which flow from Smith Farm. Tr. 24-30, 134-135 (Vol. II), 116-117 (Vol. V). What is in dispute, however, is the jurisdictional significance of these water bodies. The evidence in this case establishes that a "significant" hydrological connection exists between the waters adjacent to the Smith Farm wetlands and navigable waters. Accordingly, the Smith Farm wetlands are "jurisdictional wetlands."

[7]Judge Charneski's complete analysis of this appears at pages 26 - 29 of his Initial Decision.

Describing this hydrological connection, he stated that "[t]his fact is best illustrated through Figures 1 and 2 of Complainant's Exhibit 87 (Stokely's report), together with the testimony of Steve Martin of the U.S. Army Corps of Engineers. Figure 1 is a portion of the U.S. Geological Service's "100,000 series topographic map, the Norfolk Virginia quad." It depicts "in a general way the location of Smith Farm" and it also appears to depict local drainages in relation to Smith [Farm]." Tr. 23 (Vol. II). Except for scale, Figure 1 of Complainant's Exhibit 87 is the same as Respondent's Exhibit 57. Martin testified that water flows from the western portion of Smith Farm through an intermittent stream, under Shoulders Hill Road ("Route 626 to the west"), and "joins up with a number of other tributary drainages." Tr. 24 (Vol. II). Martin stated that this system is called Quaker Neck Creek. From Quaker Neck Creek the water flows to Bennett's Creek and then to the Nansemond River. The Corps maintains navigation channels on the Nansemond River, which eventually flows to the James River and on to the Chesapeake Bay. Martin also noted that portions of the Quaker Neck Creek and Bennett's Creek are tidally influenced. Tr. 24, 25-26 (Vol. II). Next, to the east of Smith Farm, as depicted in Figure 1, Martin identified a water body known as the Western Branch of the Elizabeth River (also referred to as "the Western Branch"). He explained how water flows from Smith Farm to the Western Branch as follows: The eastern and southern portions of the property, primarily Chesapeake but portions of Suffolk, drain east and south into tributaries of Bailey's Creek. Bailey's Creek then discharges into the Western Branch of the Elizabeth River. Tr. 25 (Vol. II). The Corps has issued permits for docks and marinas on portions of Bailey's Creek. In addition, portions of both Bailey's Creek and the Western Branch are tidally influenced. Like the Nansemond River to the west of Smith Farm, the Western Branch of the Elizabeth River to the east of the property eventually flows to the James River and then on to the Chesapeake Bay. Tr. 25-26 (Vol. II)."

Having set forth the course of water flow off the Smith Site, Judge Charneski then detailed the course of water flows within the site itself. He began this review of the Site's internal flow with "Figure 2 [of EPA Exhibit 87 which depicts] Smith Farm [] divided into four quadrants, wherein seven drainages from the property are identified. Tr. 26-27 (Vol. II). All of the seven drainages flow intermittently. Tr. 77 (Vol. II). . . . [Corps witness Martin stated that the northwest quadrant] . . . drains to Drainage No. 6 (identified as a broken blue line), which flows from east to west and discharges into an intermittent stream that makes up a portion of Quaker Neck Creek. Tr. 27 (Vol. II); *see* Tr. 134 (Vol. II) (Stokely testifying that the northwest quadrant drains into Quaker Neck Creek and from there into the Nansemond River.).

For the southwest quadrant, Judge Charneski noted that it "drains in two directions [with a portion draining] to Drainage No. 7, an intermittent stream. This intermittent stream flows west to Quaker Neck Creek and then to Bennett's Creek and ultimately the Nansemond River. The remainder of the southwest quadrant drains south to Bailey's Creek through Drainage Nos. 1 and 2, both [of which were] described by Martin as a 'channelized intermittent waterway,' [and from there the] water flow[s] from Bailey's

Creek to the Western Branch of the Elizabeth River. Tr. 28-29 (Vol. II); *see* Tr. 139 (Vol. II) (Stokely testimony).

[As for] [t]he northeast quadrant [of the Site, it] also drains to Bailey's Creek [and] . . . . ultimately the water from the northeast quadrant travels through Drainage Nos. 2, 3, 4 and 5 to Bailey's Creek and on the Western Branch of the Elizabeth River." Judge Charneski also found that "the wetlands on the northern portion, northeast quadrant of Smith Farm are part of a larger wetland complex that extends appreciably north of the Smith Farm property." Tr. 31 (Vol. II). *See* Tr. 134-135 (Stokely testimony).

For the last quadrant, Judge Charneski found "that the southeast quadrant drains through Drainage Nos. 2, 3 and 4, all intermittent drainages to Bailey's Creek [and] [f]rom there the water proceeds to the Western Branch. Tr. 29 (Vol. II); *see* Tr. 138 (Vol. II) (Stokely testimony).

Judge Charneski also took note that Martin, accompanied by Mr. Stokley, "walked the periphery of the Smith Farm site and that he traced each of the seven drainages by walking them "down to tidal limits." Tr. 3-310 (Vol. II). Further, the Judge found as fact Martin's statements "that Quaker Neck Creek becomes tidally influenced approximately 2,600 feet along the drainage from Smith Farm [while] Bailey's Creek becomes tidally influenced approximately 4,200 feet from Smith Farm. Tr. 31-32 (Vol. II). *See* CX 102 (Photographs O and Y).

Finally, Judge Charneski spoke to the testimony regarding the 'ordinary high water mark' in the various tributaries conveying water from Smith Farm to the point where Quaker Neck Creek and Bailey Creek become tidally influenced, [adopting Martin's explanation] that "[a]lmost by definition ordinary high water mark would be associated with non-tidal conditions," [and defining that as] a clear natural line impressed on the bank, shelving, destruction of terrestrial vegetation, or the presence of litter and debris."[8]

Thus, for the reasons discussed above, Judge Charneski found that the wetlands involved at the Smith Site are adjacent and contiguous to water bodies which flow from Smith Farm and that a significant hydrological connection exists between the waters adjacent to the Smith Farm wetlands and navigable waters, making the Smith Farm wetlands jurisdictional wetlands.

III. The Supreme Court's decision in *Rapanos v. United States Army Corps of Engineers,* 547 U.S. 715 (2006), 126 S. Ct. 2208.

[8]Further, Judge Charneski rejected the Respondent's attempt to label the 'ordinary high water marks' as 'high water marks.' Respondent contended that using the former label enables the Corps to use the term 'bank' interchangeably with the term 'shore' and thereby expand the scope of the CWA's jurisdiction. ID at 26-29.

A. Overview.

As framed by Justices Scalia, the Chief Justice, Justice Thomas and Justice Alito, *Rapanos* presented the question of whether wetlands, which lie near ditches or man-made drains that eventually empty into traditional navigable waters, constitute "waters of the United States" within the meaning of the Clean Water Act. That question is not answered however, because while the four named Justices announced the judgment of the Court, the *opinion* was issued by those four justices without Justice Kennedy's concurrence and with four other Justices, Justice Stevens, Justice Breyer, Justice Souter, and Justice Ginsburg dissenting. Thus, a decision was issued only because Justice Kennedy joined Justices Scalia, the Chief Justice, Justice Thomas and Justice Alito on the limited agreement that the case should be remanded.

The key point is that, with no group able to muster the agreement of five Justices, the necessary number to have a precedential opinion, *Rapanos* leaves the scope of the CWA in a state of uncertainty. The text of the judgment which Justice Kennedy joined was extremely brief, as it was limited to vacating "the judgments of the Sixth Circuit in both No. 04-1034 [*Rapanos*] and No. 04-1384,[9] and remand[ing] both cases for further proceedings."

As the remand "for further proceedings" contained no specific mandate to the lower court, there is a real question of what one can say authoritatively about the *Rapanos* decision. One could reasonably conclude that, beyond the five justices' terse agreement to remand the matter, the decision reveals no majority view at all, and is expressive only of four justices who have a more restrictive view of the reach of the Clean Water Act, four who have a more expansive view, and one justice who has another perspective about the Act's scope which does not fit comfortably within either of the other two groups.

B. The Perspective of four Justices within the Plurality in *Rapanos*

This Court's discussion will first review the Supreme Court's plurality judgment, which was authored by Justice Scalia. It does not take one long to get a sense of where the plurality is coming from on the issue of the scope of the Clean Water Act as, by the second paragraph of the opinion, it has described the Corps of Engineers as "an enlightened despot," and from there it proceeds first to discuss not the law at issue, but the significant costs incurred in obtaining permits to deposit fill in waters of the United States.

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[9]The second docket number applies to the other case affected by the Court's judgment, *Carabell et al v. United States Army Corps of Engineers et al.* , 391 F.3d 704 (6th Cir. Mich., 2004)

When the four Justices turn to the legal issue, the CWA's use of the phrase "*the waters of the United States*," they note that in *United States v. Riverside Bayview Homes, Inc*., 474 U.S. 121 (1985), ("*Riverside Bayview*"), it upheld the Corps of Engineers interpretation of that phrase to "include wetlands that 'actually abut[ted] on' traditional navigable waters." Thus, the plurality expresses that *Riverside Bayview* only spoke to "wetlands abuting navigable-in-fact waters." The four Justices note that in the Court's subsequent decision in *Solid Waste Agency v. United States Army Corps of Eng'rs*, 531 U.S. 159 (2001)("*SWANCC*"), that decision referred back to *Riverside Bayview*, and in their view it "was the significant nexus between the wetlands and 'navigable waters' that informed [its] reading of the CWA" in that case, with the conclusion that the Corp's jurisdiction did not extend to ponds that are not adjacent to open water, and consequently that nonnavigable, isolated, intrastate waters were not included within waters of the United States.

It is important to take note that the plurality accepts that the terms 'navigable waters' and 'waters of the United States' are not limited to waters that are navigable in fact or susceptible of being rendered so. They note that the CWA uses the phrase 'navigable waters' as a defined term but that the *Act's own definition* does not support the idea that it literally means "navigable-in-fact." Instead, the definition simply offers that 'navigable waters' means 'the waters of the United States.' The plurality offers additional support to its conclusion that navigable waters are not limited to waters that are navigable in fact with its acknowledgment that Section 1344(g)(1) of the CWA includes, in referring to navigable waters, waters *other than* those actually used to transport commerce as well as those that are susceptible to being improved so that they could transport commerce. Significantly, this provision, cited by the plurality, referring to such a broader meaning of 'navigable waters,' *expressly includes wetlands that are adjacent to* this acknowledged broader meaning for such waters. Given the Act's defintion and the cited statutory provision, the plurality also notes that even *Riverside Bayview* and *SWANCC*, dismiss the idea that the term "navigable waters" is to be taken literally. That the plurality concedes this is significant, as they also acknowledge that the CWA's *purpose* "is 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'"

Notwithstanding these concessions, the plurality maintains that 'navigable' is "not devoid of significance," but they defer deciding "the precise extent" of the term for another day, and turn instead to a discussion of what the term "waters" means under the Act. As their starting point, the plurality states that it can't be "the expansive meaning that the Corps would give it." In this regard, the plurality first notes that navigable waters is not defined as "water of the United States, but rather that the definite article "the" is employed so that the phrase used is "*the* waters of the United States." With that observation and by resorting to the dictionary, the plurality states that "*the* waters "refers to waters as "'found in streams and bodies forming geographical features such as oceans, rivers, [and] lakes,' or 'the flowing or moving masses, as of waves or floods, making up such streams or bodies.'" From that aforementioned article (i.e. "*the*") and the dictionary,

the plurality states that "'the waters of the United States' include only relatively permanent, standing or flowing bodies of water." Applying its definition of "the waters United States," the plurality's definition includes a range of terms that are encompassed within waters, a gamut that starts with "streams" and ends with rivers, lakes and, ultimately, the oceans.[10]

"streams,"[11] As the plurality places emphasis on the dictionary for support, it is noted that being among waters accepted by the plurality, is itself defined as a rather minor class of waters, to include "[a] flow of water in a channel or bed, as a brook, rivulet or small river." American Heritage Dictionary 1776 (3d ed. 1992). Thus, one sees that, much like the interconnected water ecosystem that Congress was intent upon restoring, a chain of connected words also flows in the dictionary itself from the term "stream," to include a "brook" and a "rivulet." A "brook," for example, refers one to "creek," which is defined as "[a] small stream, often a shallow or intermittent tributary to a river." *Id*. at 243, 439. Similarly, a "rivulet" is defined as "[a] small brook or stream; a streamlet," and "streamlet," to continue this chain, refers to "a *small* stream." *Id*. at 1777 (emphasis added). Accordingly, by the plurality's adoption of "streams" as within "the waters" of the United States, small, shallow, even intermittent waters are included and while streams are *often* a tributary to a river, the definition does not state that is *always* the case.

Apart from the inclusive nature of the term "stream," as set forth in the dictionary, the plurality then narrows that broad dictionary definition by attaching its own limitation that "' the waters of the United States' include only relatively permanent, standing or flowing bodies of water . . . [which] connote continuously present, fixed bodies of water, as opposed to ordinarily dry channels through which water occasionally or intermittently flows." Thus, the plurality, in conflict with the dictionary, asserts that "'streams'

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[10]The plurality also includes "'bodies of water' 'forming geographical features,'" within its definition.

[11]The plurality does not accurately describe the dictionary definition of a stream because they add, through connotation, a "continuous flow" requirement which does not appear in the definition. While the plurality states that the "principal definition . . . includes reference to such permanent, geographically fixed bodies of water," the definition they cite does not include that, providing only that a stream is "[a] current or course of water or other fluid, flowing on the earth, as a *river, brook, etc*." The "continuous flow" element only appears, as the plurality acknowledges, with "[t]he other definitions of 'stream,' and even there the dictionary definition cited by the plurality speaks in terms of "a *steady* flow" and "[a]nything issuing or moving with *continued succession* of parts." 126 S.Ct. at 2221 n. 6. (emphasis added). Thus, even the other definitions emphasize that a stream is like a chain stretching from one point to another point but that is a distinct concept from *continual* flow.

connote[] continuously present, fixed bodies of water, as opposed to ordinarily dry channels through which water occasionally or intermittently flows." Employing its connotation, the plurality maintains that the dictionary suggests or implies that "'streams' connotes a continuous flow of water in a permanent channel . . . ." While this would suggest a significant restriction as to the scope of "the waters of the United States," the illustrative comparison the plurality employs is not particularly restrictive as they suggest that the proper comparison of the extremes would be between a "continuous flow of water in a permanent channel" on one hand and "transitory puddles or ephemeral [i.e. something which lasts for "a remarkably brief time] flows of water," on the other. Few would maintain that puddles or flows which only last for a *remarkably brief time*, are within the Clean Water Act. Even so, as Justice Kennedy suggests, the choices offered by the plurality are an inadequate depiction of the spectrum of circumstances that can arise. The plurality itself seems to recognize this too, since they add, in a footnote, that by using the descriptor "relatively permanent," they do not "*necessarily* exclude streams, rivers or lakes that might dry up in *extraordinary circumstances*, such as drought . . . [nor do they] *necessarily* exclude *seasonal rivers*."[12] In sum, the plurality maintains that "channels containing merely intermittent[13] or ephemeral flow" are not within the phrase "the waters of the United States," a conclusion it finds buttressed by resorting to the "traditional" application of the phrase "navigable waters."[14]

The plurality then turns to the issue of "whether a wetland may be considered 'adjacent to' remote 'waters of the United States' because of a mere hydrologic

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[12]The plurality postpones to another day articulating "exactly when the drying-up of a stream bed is continuous and frequent enough to disqualify [it as a water of the United States]." For now, the plurality asserts that "streams whose flow is '[c]oming and going at intervals . . . [b]roken, fitful' . . . or 'existing only, or no longer than a day; diurnal . . . short lived . . . are not."

[13]EPA notes that in *United States. v. Moses,* 2007 U.S. App. LEXIS 18483 at *12 - *****17 (9th Cir. Aug. 3, 2007), the Ninth Circuit, upon considering *Rapanos,* concluded that decision did not alter the conclusion that "seasonally intermittent stream which ultimately empties into a river that is a water of the United States" is itself a water of the United States, concluding that "the Supreme Court unanimously agreed that intermittent [seasonal] streams can be waters of the United States." EPA Br. at 32, citing *Moses* at *17.

[14]This is a surprising source of support for the plurality to rely upon, given that earlier in its opinion it acknowledged that the traditional definition does not apply as used in the CWA. Yet, the plurality does this, stating that the phrase "navigable waters" must carry "*some* of its original substance." (emphasis in original). In *Rapanos* the plurality identifies only *some* of that original substance, informing that "at bare minimum [it means] the ordinary presence of water." The plurality also identifies "open waters," a term used in *Riverside Bayview* and *SWANCC* as another descriptor of "navigable waters," advising that "typically dry channels" are not "open waters." Similarly, the plurality expresses that "channels that sometimes host ephemeral flows of water" are not "waters of the United States."

connection to them." For them, *Riverside Bayview* informs only that the Corps could reasonably conclude that a wetland adjoining waters of the United States is part of those waters. The plurality states that this deference, articulated in *Riverside Bayview*, was attributable to the "inherent ambiguity in drawing the boundaries . . . at which water ends and land begins," and represents a conclusion which was reached because of the "significant nexus between the wetlands and 'navigable waters.'" The plurality asserts that this means "*only* those wetlands with a continuous surface connection to bodies that are 'waters of the United States' in their own right . . . are 'adjacent to' such waters and covered by the [CWA]." This coverage only applies in instances where it is difficult to determine where the 'water' ends and the 'wetland' begins. Thus, as applied to the circumstances in *Rapanos* (and the companion case, *Carabell*), the plurality would require a wetland that has a continuous surface connection with an adjacent qualifying channel. To be a qualifying channel, it must contain a relatively permanent body of water and the channel itself must be connected to traditional interstate navigable waters. Hence, a "mere hydrologic connection" between a wetland and a remote water of the United States is insufficient. Rather, for those four Justices, a continuous surface connection between the wetland and a qualifying channel is required for CWA coverage of a given wetland.[15] Thus, the plurality asserts that it is a wetland's physical connection to covered waters that must be present for CWA coverage, and that the Act does not concern itself with the ecological relationship between a water and a wetland. (126 S.Ct. 2229.)

C. The Perspective of Justice Kennedy

Before examining the particulars of Justice Kennedy's views of the jurisdictional reach of the Clean Water Act, from a broader perspective it should be noted that, in contrast to the plurality's word-driven analysis of jurisdiction, his analysis is fundamentally guided by Congress' expressed purpose under the Act of restoring the water quality of the Nation's waters, which quality in turn is connected to wetlands as they are a vital part of the aquatic ecosystem.

Citing the Court's decision in *SWANCC* and its holding that a "water or wetland must possess a 'significant nexus' to waters that are or were navigable in fact or that could reasonably be so made," Justice Kennedy describes the issue in *Rapanos* as "whether the term 'navigable

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[15]The plurality expresses that, without such a continuous surface connection between the water and the wetland, it is not difficult to determine where water ends and a wetland begins. In those situations the plurality maintains that such wetlands are outside the CWA. The plurality believes that ecological concerns only come into play under the CWA where there are boundary-drawing problems, but if there is no continuous surface link between the water and the wetland the boundary is clear, the two are separate, and the CWA does not apply. Accordingly, they would hold that no continuous surface link between the water and wetland spells no CWA coverage.

waters' in the Clean Water Act extends to wetlands that do not contain and are not adjacent to waters that are navigable in fact." To resolve that question, Justice Kennedy agreed that a remand was appropriate in order for the lower court to apply the *SWANCC* "significant nexus" test, something that he believed neither the plurality nor the dissent had applied.[16]

At the outset, Justice Kennedy observes that statute itself provides that "[t]he 'objective' of the Clean Water Act [] is 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Wetlands, he points out, are "defined as 'those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions [and they] generally include swamps, marshes, bogs, and similar areas.' " *Id*., citing 33 C.F.R. § 328.3. He also noted that the United States Army Corps of Engineers, ("Corps"), Wetlands Delineation Manual elaborates that wetlands require: (1) a prevalence of plant species typically adapted to saturated soil conditions, (2) hydric soil, and (3) wetland hydrology. Justice Kennedy also observes that the trial court in *Rapanos* found that each of the wetlands parcels in issue[17] had a surface water connection which flowed to tributaries of a river and, ultimately, to navigable waters.

In his review of prior CWA decisions by the Court, Justice Kennedy states that in *Riverside Bayview* the Court deferred to the Corps' judgment where the relationship between open waters and adjacent wetlands was involved. Consequently he agreed with the plurality that the Corps' authority to make such judgments for wetlands that did not fit that description was not decided. Further, he characterizes *SWANCC*, as the Court's rejection of classifying isolated ponds as "navigable," a conclusion that placed them outside of the scope of "waters of the United States." Such isolated ponds are not waters of the United States because they lack a significant nexus between wetlands and navigable waters, the principle articulated in *Riverside Bayview*. Thus he expresses that a close connection between "a nonnavigable water or wetland and a navigable water" provides such a significant nexus and conversely, where there is "little or no connection," the significant nexus is absent.

Justice Kennedy takes note that the plurality agrees that Congress intended by the CWA to regulate "at least some waters that are not navigable in the traditional sense." From that point of agreement however, Justice Kennedy departs from the plurality's restrictive reading that "navigable waters" are limited "relatively permanent, standing or flowing bodies of water," a phrase which the plurality applies to rivers which flow continuously except during dry months but which does not encompass "intermittent or ephemeral streams." As to wetlands, Justice

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[16]Justice Kennedy stated that the lower court "did not consider all the factors necessary to determine whether the lands in question had . . . the requisite nexus."

[17]Applying the Corps' three-part test, the District Court found that two other parcels were not shown to be wetlands, but those parcels were not in issue on appeal. Regarding the other case, *Carabell*, the District Court granted summary judgment for the Corps.

Kennedy also departs from the plurality's view that they are covered under the CWA "only if they bear a continuous surface connection to bodies that are waters of the United States in their own right.'"[18] For both of the plurality's interpretations of the statute, Justice Kennedy points out that such a construction makes little practical sense in the context of a remedial statute concerned with downstream water quality. With that observation in mind, Justice Kennedy asserts that nothing in the statute suggests that Congress intended to exclude irregularly flowing waterways and, like the plurality's reliance upon the dictionary, his own consultation of that source leads him to conclude that it is reasonable for the Corps to have determined that the CWA covers the paths of impermanent streams.

Regarding wetlands, Justice Kennedy also departs from the plurality's view that "wetlands lacking a continuous surface connection to other jurisdictional waters" are not covered by the CWA. *Riverside Bayview*, he notes, upheld "the Corps' authority to regulate 'wetlands adjacent to other bodies of water over which the Corps has jurisdiction,'" as such wetlands "have significant effects on water quality and the aquatic ecosystem." Further, Justice Kennedy observes that although in some instances a clear boundary between a waters' edge and the beginning of land may be discernable, that does not necessarily mean that wetlands outside such a boundary are beyond the Corps' jurisdiction. The Justice's point is that the relationship between navigable waters and jurisdictional wetlands may be more complicated than merely finding a continuous surface connection. Because of this potential for more involved, less obvious, connections, Justice Kennedy posits that wetlands holding moisture disconnected from adjacent water-bodies may constitute jurisdictional waters and he takes note that neither *Riverside Bayview* nor *SWANCC* suggest otherwise. Put differently, Justice Kennedy's point is that it should not be *required* that wetlands contain moisture which is continually connected to neighboring waterways. Further, because of the difficulty, in some situations, of determining the more complex associations between wetlands and waters, deference to the Corps is appropriate, at least where the Corps' determination has been made from a reasonably based finding that a particular wetland has significant effects on water quality and the aquatic ecosystem. He notes, for example, that wetlands may perform filtering and runoff control functions which are not measurable by simply examining whether there is a surface water connection between the wetland and waters in issue.

Justice Kennedy's exceptions were not limited to the plurality's perspective as he also took exception to what he considered to be the dissent's disregard of the principle that *navigable* waters must mean something under the CWA. Although it is now a given that "navigable waters" nonintuitively includes waters that are not navigable, Justice Kennedy could not abide by the dissent's willingness to place no limit on that term, by its inclusion of wetlands, regardless

[18]To appreciate that the limited basis of Justice Kennedy's concurrence with the judgment of the plurality was only to remand for "further proceedings," one need look no further than his statement that the plurality's opinion represents an "unprecedented reading of the [Clean Water] Act."

of how remote and insubstantial they are. From his perspective, that approach is problematic because it affords unbounded deference to the Corps' determinations. Given these competing concerns, for Justice Kennedy the dividing line is the presence of a significant nexus, a shorthand expression meant to include those wetlands which "may function as integral parts of the aquatic environment even when the moisture creating the wetlands does not find its source in the adjacent bodies of water."

Accordingly, attaching meaning to the term "navigable waters" is accomplished where there is a showing of a significant nexus and whether there is a significant nexus is evaluated with an eye toward the Act's goals and purposes. For wetlands, such a nexus exists where they function as "integral parts of the aquatic environment" and this may be demonstrated where they "perform critical functions related to the integrity of other waters . . . such as pollutant trapping, flood control, and runoff storage." Thus, when wetlands, either acting "alone or in combination with similarly situated lands in the region, . . . significantly affect the chemical, physical, and biological integrity of other covered waters," they have the requisite nexus and fall within the meaning of "navigable" under the Act. In contrast, Justice Kennedy does not accept the dissent's position that all "non-isolated wetlands" are within the Act's jurisdiction, because such a view does not evaluate wetlands that are remote and insubstantial. Although a wetland's adjacency to navigable-in-fact waters is conclusive by itself to show an ecological connection, adjacency to tributaries which are not navigable-in-fact is a more involved determination which is not susceptible to a blanket pronouncement. Consequently, apart from wetlands that are adjacent to major tributaries, which may be indistinguishable for jurisdictional purposes from wetlands adjacent to navigable waters, for other tributaries the issue will be resolved on the basis of whether the wetland in issue plays "an important role in the integrity of an aquatic system comprising navigable waters as traditionally understood."[19]

In sum, Justice Kennedy's test for Clean Water Act jurisdiction is the same in all instances. However, the application of the test is streamlined where wetlands are adjacent to navigable-in-fact waters or adjacent to major tributaries, since in those instances the significant nexus, that is, the important role in the integrity of an aquatic system may be presumed to exist. For the remaining, non-presumptively jurisdictional situations, the functions related to the integrity of waters such as pollutant trapping, flood control, and runoff storage, must be determined on a case-by-case basis.

D. The Perspective of the Dissent

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[19]Although Justice Kennedy expressed that the same evidence introduced in the trial below may show the required significant nexus with navigable-in-fact waters, the analysis applied by the court below was insufficient in that it only determined that the wetlands in issue had "surface water connections to tributaries of navigable-in-fact waters." This analysis in Justice Kennedy's estimation was too superficial as he apparently does not consider a mere hydrologic connection as a proxy for establishing the required nexus.

The four Justices who wrote in dissent to the plurality's view, describe the issue in *Rapanos* as "whether wetlands adjacent to tributaries of traditionally navigable waters are 'waters of the United States' subject to jurisdiction of the Army Corps" and the issue in *Carabell* as whether a man-made berm separating a wetland from an adjacent tributary affects the Corps' jurisdiction. Unlike Justice Kennedy and the plurality, the dissent maintains that these issues were resolved long ago by Congress and the Court. Writing for the dissent, Justice Stevens expressed that the Corps' determination that wetlands which are adjacent to tributaries of traditionally navigable waters have a role in preserving the quality of our Nation's waters and that such a determination is a classic example of the Executive Branch's reasonable interpretation of a statute to which deference is owed.[20] The dissent notes that in *Riverside Bayview* the issue was described as whether the CWA "'authorizes the Corps to require landowners to obtain permits from the Corps before discharging fill material into wetlands adjacent to navigable bodies of water *and their tributaries.*'" Dissent at *2255, quoting *Riverside Bayview*, 474 U.S. at 123. Thus, the dissent expresses that the only reservation expressed in *Riverside Bayview* was whether the Corps had jurisdiction over truly isolated waters.

Significantly, the dissent notes that Congress decided in 1977 not to limit the Corps' jurisdiction over wetlands. *SWANCC*, the dissent points out, did not address wetlands but rather spoke to *isolated waters*, that is, waters "that are *not* part of a tributary system to interstate waters or to navigable waters of the United States, the degradation or destruction of which could affect interstate commerce." Dissent at 2256, emphasis in dissent. Rather than requiring a case-by-case wetland determination, the dissent asserts that the Corps' exercise of jurisdiction is reasonable upon the Corps' determination that wetlands adjacent to tributaries "generally[21] will have a significant nexus to the watershed's water quality." Dissent at 2258.

E. The Precepts from *Rapanos* [22]

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[20]Justice Breyer joined in the dissent and also wrote separately, stating that the Corps' authority under the CWA extends to the limits of Congress' power to regulate interstate commerce. While the Corps had not yet done so, it has the power through regulations to define "waters of the United States" and if it does so those regulations will require the Court's deference to the Corps' regulatory expression of the scope of the term.

[21]Accordingly, not having to make a case-by-case determination, once the Corps makes a general determination that such wetlands serve to perform some of the traditional water quality functions CWA jurisdiction is established.

[22]Respondent's view of *Rapanos* is that "CWA jurisdiction is limited to those 'relatively permanent, standing or continuously flowing bodies of water' generally recognized as 'streams[,] . . . oceans, rivers [and] lakes' that are connected to traditional navigable waters [and accordingly

Based on the foregoing discussion and the uncertainty remaining in the wake of the divided Court in *Rapanos*, competing jurisdictional tests need to be applied when confronted with wetlands which lie near ditches or man-made drains that eventually empty into traditional navigable waters.

1. Applying the perspective of four justices within the plurality, jurisdiction requires showing relatively permanent, standing or flowing bodies of water. Such relatively permanent waters include small, shallow and intermittent waters, as long as they are more than ordinarily dry channels through which water only occasionally or intermittently flows. A transitory puddle, which lasts for a remarkably brief time is an example of a water that is outside of the CWA's coverage.

For wetlands where it is difficult to determine where the water ends and the wetland begins, to be covered under the Act, the plurality would require that there be a continuous surface connection between the wetland and a qualifying channel and ultimately to bodies that are 'waters of the United States' in their own right .

2. Applying Justice Kennedy's perspective,[23] intermittent, impermanent or ephemeral streams are within the Act. Where wetlands are the issue, they need not have a continuous surface connection to bodies that are waters of the United States in their own right but where such wetlands are not adjacent to waters that are navigable in fact, there must be a "significant nexus" present. In such instances, a close connection between the wetland and a navigable water provides such a nexus. Further, wetlands holding moisture disconnected from adjacent water-bodies may constitute jurisdictional waters, as where they perform filtering and runoff control functions or otherwise function as integral parts of the aquatic environment. Pollutant trapping, flood control, and runoff storage are examples of such functions related to the integrity of other waters. Deference to the Corps' assessment has its place too, where it makes a finding that a

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that] [f]ederal jurisdiction over wetlands abutting these water bodies is permitted only when the water feature and the wetlands contain a continuous surface water connection such that the wetland and the covered water are 'indistinguishable,' [with the consequence that] [e]phemeral and intermittent connections do not suffice." R's Br. at 6. On this assumption, Respondent contends that no CWA jurisdiction was established as "[t]he Property is not adjacent to any navigable waters. . . . [nor] connected to any navigable waters by any continuous chain of wetlands or through a continuously flowing stream or river. . . . [nor can] . . . [t]he drainages or ditches on the Property . . . be considered 'waters of the United States'. . . [as] [t]hey are not relatively permanent, standing or continuously flowing bodies of water [which are] generally recognized as streams, oceans, rivers or lakes." R's Br. at 6 - 7. For the reasons set forth in this decision, the Court does not agree with Respondent's interpretation of *Rapanos* nor with its take on the facts.

[23]The four dissenting Justices' view is not separately applied simply because there would have been no remand in this matter under their interpretation of the reach of the CWA.

wetland has significant effects on water quality and the aquatic ecosystem.

IV. Evidence and Findings of Fact from the Remand Hearing

As noted at the outset of the remand proceeding, the Smith Farm Site ("Site"), lies within a peninsula. The Site is part of the Chesapeake Bay watershed. Tr. 640. Judge Charneski's decision described it as bounded on west by Nansemond River and to the east by western branch of Elizabeth River, both of which are navigable rivers. The Nansemond and Elizabeth Rivers flow to the James River and from there to the Chesapeake Bay. CX 111, a USGS topographic map. The only significant source of water at the Site comes from precipitation. Tr. 215.

EPA witness Peter Stokley's expertise includes aerial photo interpretation and he has taken the National Wetlands Inventory training course. Wetlands and watercourses can be identified through aerial photography.[24] Tr. 54, May 14, 2007. As Stokley noted, "wetlands are formed based on the long-term climatic record of an area, not short-term precipitation records," and although a recent rain may show up on an aerial photograph, the uplands will still be discernable and any boundary change in a natural forested setting change will be minimal. Tr. 56-57. Stokley, referring to Exhibit 45 from the Initial Hearing and to an aerial photograph within that exhibit, dated March 10, 1995, noted that the area had been ground-truthed and then compared to the aerial photograph. Exhibit 45, Figure 4, Bates 0831. He also took a reference sample, which represented the general condition of the wetlands across the site which had not been impacted by activity. This reference sample gave EPA a view of what the site looked like in 1994, before the activity in issue had occurred. This sample was determined to be a wetland. CX 87 Figure 5, Bates 0832, Tr. 64.[25]

In the wake of the remand, Stokley performed another analysis of the drainage from the

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[24]Aerial photography forms the basis for the National Wetlands Inventory, but it is not so detailed that landowners can use it to determine exactly where a wetland begins and ends. Tr. 134. For Smith Farms, though, it is important to note that the government 'ground-truthed' the less precise NWI boundaries. Stokley did use the NWI boundaries at least for determining the total area, 'the suite' as he put it, of comparable wetlands. Tr. 137. Similarly, although it has its limitations, the NWI can be used to tell hydric from non-hydric soils. Tr. 137. In the clearest of cases, such aerial photography can make that call, but where it is not so obvious, again one must employ ground-truthing. Tr. 138. So too, aerial photography can give one some information (i.e. indicators of function) about the wetland function of a particular wetland, but a "full functional assessment" requires more than aerial photography. Tr. 139.

[25] CX SF 87, Figure 3, 1072, is a 1995 aerial photograph, color infrared with the National Wetlands Inventory ("NWI") imposed on it. The NWI is a mapping of the extent of wetlands across the United States but it is also a classification system of the nation's wetlands. Tr. 70. May 14, 2007.

Smith Farm Site. It is important to take note that the numerous photos which are included within CX SF 125,[26] show, through historical aerial photography, that several of the drainages at the Site have been in existence for a very long time.[27] In contrast, the forested portion of Smith Farm showed no ditches in 1963.

For the remand proceeding, Stokley was tasked to determine if there were any tributaries and wetlands near the Site. By taking a broad view of the area, he identified that the Site sits in the middle of a peninsula-like setting, surrounded on the east side by the Western Branch of the Elizabeth River and on the west by the Nansemond River and, about three miles to the south, by the Great Dismal Swamp.[28] As depicted in CX SF 125, SF Remand 048, at Figure 1, (among other examples in the record), it is fair to state that the Site is truly surrounded by relatively nearby navigable- in-fact waters on three sides.[29] Stokley looked at other land within this virtual peninsula and, using National Wetlands Inventory mapping, found additional freshwater forested

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[26]The transcript has occasional errors regarding specific pages discussed during the testimony. However, through the context of a witness's answer, the specific page being referred to is clear. For example, at Tr. 74, the question from the EPA attorney appears to be asking about "Bates No. SF Remand 209" within EPA Remand Exhibit CX SF 125, but the actual page asked about is SF Remand 039, an inescapable conclusion from the context of the questions being asked.

[27]For example, witness Stokley was able to identify drainages 1, 2, 3, 4, 5, 6, & 7, all present in the 1994 topographic map, and locate the same drainages in the 1963 topographic map. May 14, 2007 at Tr. 77-80. Figure 5, a 1952 aerial photo, shows Drainages 3, 4, 5, & 6. SF Remand 050. Another, but not the only other example, Figure 3, found at SF Remand 049, is a 1937 aerial photograph, showing drainages 1, 2, 4, and the portion of drainage 6 that goes under the railroad track to the far west of the property is visible "where the drainage toward Quaker Neck Creek comes underneath the railroad track onto the site." *Id*. at Tr. 88. Even a 1918 USGS map shows a portion of a tributary of Quaker Neck Creek extending onto the Site, indicating that the mapping reflects a drainage pattern from the Site to Quaker Neck Creek. Tr. 90, citing CX SF 125, SF Remand 048 at Figure 2. Another drainage feature, at the approximate location of Drainage 5 also appears at Figure 2.

[28]Peninsula is an apt description of the area wherein the Site lies. Even Respondent's Counsel referred to the Site as being on a peninsula, i.e. the land between the Elizabeth and Nansemond Rivers. Tr. 596. Indeed, Respondent's witness Dr. Straw stated that if one went "way back in history" the Site was under water. Tr. 797. Thus the Site's surface materials share the topography [that one would find in the] sediments on the bottom of the Chesapeake Bay." Tr. 798.

[29]As the crow flies, the scale accompanying CX SF 111 shows that the distance from the Site to the Western Branch of the Elizabeth River to be less than three miles.

wetlands that were similar to the Site,[30] including having a similar elevation. Tr. 91-92. Figure 12, within CX SF 125, SF Remand 053, is revealing, showing that the Site drains to two watersheds: Bailey Creek watershed to the east and Quaker Neck Creek watershed to the west. Tr. 95. The comparable wetland that was selected was based on NWI classification and because the wetlands shared a location down the center of the peninsula-like setting and shared a headwater setting. Tr. 234. Once Stokley selected comparable wetlands, ground-truthing followed. A comparable site selected for ground-truthing appears within CX SF 309, SF Remand 941, Figure 5,[31] where the Shoulder Hill Preserve Site ("Shoulder Hill") is identified in the upper right quadrant of that figure. Stokley took samples at Shoulder Hill and they showed a water regime similar to that mapped by the NWI and the general landscape was the same as well.[32]

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[30]In looking for a comparable forested wetland, Stokley sought a comparable state of palustral forested seasonally saturated temporarily flooded wetlands, without qualifiers like ditches. Comparability does not mean that sites are identical. Thus, the comparable site did not have ditched wetlands, while the Site in issue does have some. Tr. 211.

[31]As brought out by EPA during its direct examination of Stokley, the solid blue lines depicted on Figures 1 through 5 (at CX SF 309, SF Remand 937 through 941) were created by the USGS and reflect the digital drainage layer, but the lines do not purport to differentiate as to the type of flow, that is between perennial or intermittent, that exists, but it is obvious that the abundance of waterways depicted in the aerial photograph would not be mistaken for transitory puddles.

[32]Stokley conceded that he pushed the map line indicating the wetland borders out to the property bounds, but the NWI map does not in fact extend the wetlands that far out. Extending that line made it appear that the wetlands are closer to Quaker Neck Creek than they really are. While Respondent's Counsel tried to make much about whether Stokley's lines were drawn with absolute exactness, the larger and more significant point is that his study informed him as to how the Site interacts with Bailey Creek and his conclusion that Bailey Creek "comes up to and drains those agricultural fields which are on the property." Tr. 185. Although there were some small variations between mapping lines, NWI mapping and interpretation of aerial photographs, Stokley's ultimate analysis and conclusions benefitted from his 'ground-truthing,' that is, that he personally visited the Site. Tr. 256. Thus the Court recognizes that rather than the exactness of where a line was drawn, Stokley was correctly characterizing the Site's drains. Although Stokley's testimony would have had less weight had he simply relied on maps, that was not the case as he was at the Site as well. Accordingly, while Figure 5 makes it look like the stream stops and then resumes, that does not mean that in fact it does that. Stokley's personal knowledge of the details of the Site and the drainages thereon constitute the more reliable evidence and the Court finds his testimony credible. Although Respondent's Counsel attempted to undercut Stokley's analysis by noting that the 1955 USGS topographical map depicts at the far northwestern portion where the blue line drainage pattern extends toward Stokley's area of analysis, a dotted or dashed blue line, which becomes solid after it crosses the railroad tracks, none of this undercut Stokley's conclusion that the drainage configuration from the western side of the Site was in place from 1920 or that CX SF 248 depicts the drainage that has been present

Thus, the ground sampling confirmed the accuracy of the earlier mapping analysis.[33] Additional ground sampling was also taken at the Site itself. Figure 3, within CX SF 309, at SF Remand 939, shows the ground sampling location points taken at the Site by the government on January 24, 2007. Sample Point B was one of these and it was determined to be a wetland. This led Stokley to conclude that everything else on the Site with the same signature would also be wetlands. Tr. 205.

Although Stokley stated that *tributaries* to Quaker Neck Creek are on the Smith Farm property, he could not say whether Quaker Neck Creek itself is on the property, because one can't identify *exactly* the point at which a 'tributary' becomes a 'creek.' Tr. 167. Similarly, he stated that *tributaries* to Bailey Creek are on the Site. Tr. 168.[34] Stokley testified that water exits the Site as follows: From the northeast quadrant water flows south and then is captured by the agricultural drainage, drainage 6, in the southeast quadrant. For the northwest quadrant, water flows westerly off the site via Quaker Neck Creek. Tr. 215. Water in ditches in the northwest quadrant goes to Ditch No. 6 and then further west and then off the property. Tr. 216. Water from the northeast quadrant ends up in Drainage 6, while water from the northwest quadrant goes out to Quaker Neck, under the railroad. Tr. 218-219. In sum, all the drainage would go to either Drainage 6 or 7 and then off the Site. Stokley, Tr. 219. Any water that hits the southeast quadrant goes, first through a series of drainage ditches and then to Bailey Creek. Tr. 220. All water from the southeast quadrant flows east. Tr. 220.

It was also Stokley's view that the Site presents a situation where it is difficult to determine where land ends and water begins. The Court agrees with that characterization and that, overall, the affected Site is that of wetlands connected via drainage systems and eventually to navigable waters. Tr. 248. Although as a general statement it may be said that ditches have a lateral draining effect, Stokley's view was that the ditches affected the agricultural fields, but not the forested wetlands. Tr. 227. As will be discussed in more detail later in this decision, the Court finds that the preponderance of the credible evidence supports this conclusion as well.

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since at least 1955. Tr. 266. The Court also considers this to be inconsequential to the larger issues, because no samples were taken at those locations. Tr. 144-146.

[33]The locations of the five sampling points taken at Shoulder Hill Preserve are reflected on Figure 4 of SF Remand 940, within CX SF 309

[34]Stokley considers a ditch to be a tributary at times, and he used the terms ditch and stream interchangeably with the word 'drainage' in his reports. Tr. 266. While the map boundary or the study area shifted some, this was true of the watercourses. Because the terms are imprecise, ditch, stream, drainage and tributary were used interchangeably by Stokley. Tr. 266 - 269. As Respondent's Dr. Straw stated, there is no precise line to distinguish a stream from a river. Tr. 896.

Government witness Steve Martin, is a senior environmental scientist with the Norfolk District Army Corps of Engineers Regulatory Branch. Tr. 307. Martin has done wetland delineations, that is, actually determining the extent or limits of wetlands in the field. He has also made jurisdictional determinations as to whether wetlands or other waters of the U.S. are present. Tr. 310. His experience in these areas is significant, having done some 350 delineations and more than 900 jurisdictional determinations. Further, this experience has been concentrated in the region of the Site in issue, as all of them have been been in the Virginia coastal plain and with 10 to 25 percent of those "on the peninsula of land that is bordered by the Nansemond River to the west and the Western Branch of the Elizabeth River to the east," which is the location of the Smith Farm Site. Tr. 311.

Martin was first assigned to look at Smith Farm site in November 1998 and that visit included viewing the water courses that flow away from the Site. He noted that there is a drainage divide that runs through the Site, with its western part draining west and the eastern part draining east and he has observed this firsthand. He has since visited the Site on a number of occasions. Martin confirmed that the drainage features on the topographic map,[35] indicated by the blue lines, as depicted in CX SF 87, EPA 1071, Figure 2, in fact exist at the Site, as he has seen them. Tr. 318. Further, referencing CX SF 111, another USGS topographic map which includes the Site, Martin stated that he has walked the drainages all the way to the green hash marks, also depicted on that exhibit. Tr. 318-320. He has observed flow of drainages leaving the Site in the course of visiting other sites near Smith Farm. Tr. 326. Regarding his observations about flow from Drainage 6 from the Site,[36] Martin stated that he has observed the flow in that water course but that it has not been flowing every time he's observed it.[37] Tr. 330.

The record is replete with photographs which document Martin's observations on the various dates he was at the Site. All these show flow within the various drainages at the Site. No one would confuse these water courses with transitory puddles. Examples include CX SF 279, which is a photograph Martin took on January 24, 2007, showing two drainages coming together in the area where trees had fallen. Martin was standing on the edge of Drainage 7 when taking the photo which shows the drainage on the left, a drainage ditch dug in 1999, while the drainage on the right is a natural drainage, or natural stream course. Tr. 331. The same drainage is depicted in a photograph taken three months later, on April 18, 2007. CX SF 335. Still another

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[35]Martin advised that the blue lines indicate some type of drainage, either a ditch or a stream. Tr. 325. A solid blue line on the USGS topographic map indicates a perennial feature, while a broken blue line signifies a seasonal or intermittent feature.

[36]This is more particularly described as the water course that begins at the confluence Drainages 6 & 7, and labeled as "Quaker Neck Upper" on CX SF 87, EPA 1071.

[37]Martin stated that he observed flow on Jan 6, 1999, March 16, 1999, March 31, 1999, April 5, 1999, April 19, 1999, September 10, 1999, March 19, 2003, December 18, 2006, January 24, 2007, and April 18, 2010. No water was flowing, by his observation, on May 29, 2002. Tr. 330-331.

photo of the same drainage is reflected in CX SF 328, the difference being that it was taken on December 18, 2006. Thus, these three photos show flow in three separate calendar quarters.

Other photographs document that the drainages and their flow are substantial. For example, CX SF 308, a photograph taken from Shoulders Hill Road looking east, southeast up along the drainage that exits the Site, depicts flow from drainages 6 and 7. Martin also confirmed seeing water courses flow south from the Site along water courses 1, 2, and 3. For these, he saw flow on August 3, 1999, February 8, 2000, December 18, 2006, January 24, 2007 and April 18, 2007, but he saw no flow on July 15, 1999, and May 29, 2002. Tr. 341. CX SF 324 and 325 are photographs taken south of the Site south of drainages 2 and 3. These were taken while Martin was on Portsmouth Boulevard[38] and depict flow formed by the junction of those two drainages, traveling under a culvert and moving towards Bailey's Creek. Tr. 342. Culverts are constructed for a reason, namely to deal with water flow. Martin also confirmed that he has observed flow exiting east of the Site. From that location drainages 4 and 5 had flow on March 17, 1998, August 3, 1999, November 18, 1999, August 22, 2005, June 2, 2006, August 23, 2006, December 18, 2006, January 24, 2007, and April 18, 2007. On one occasion, May 29, 2002, he saw no flow at that location. Tr. 345. CX 322 and 323 depict the drainage formed by the meeting of Drainages 4 and 5 and it too shows water flow. Martin acknowledged that each of these drainages are intermittent flow. Tr. 349. The record establishes that flow has been documented in each calendar quarter.

Referring to testimony and exhibits from the earlier hearing in this matter, Martin stated that he used the schematic map used by Robert Needham, Respondent's environmental consultant in connection with the construction of the ditches in 1999.[39] The map, which is not to scale, depicts the location of a number of monitoring wells at the Site. Tr. 356, CX 12 at 0193. Referring to previously admitted CX SF 26, at EPA 0314 and 315, Martin explained these reflect wetland determinations he made at the Site on January 6, 1999. At 0314, Martin noted the presence of sphagnum moss, an indicator that the soil is saturated to the surface for a long duration frequently. Such moss is a corroborative indicator for wetland hydrology. Shallow rooted trees, which Martin also found, is an indicator that the trees have adapted to saturated or inundated conditions. Further, his finding of hypertrophied lenticel trees also indicates saturated or inundated soils.

Martin explained that to have wetland hydrology, one needs either inundation or saturation within the rooting zone for long duration, typically this means water at or within 12

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[38]Martin, referring to CX 87, EPA 1071 and a red line located south of the Site, confirmed that is Portsmouth Boulevard, from where he photographed water courses 2 and 3. Tr. 342.

[39]A copy of that Exhibit was independently introduced into the record and given a new exhibit number, CX SF 439. The dashed lines indicate the Tulloch ditches that were created in 1999. Tr. 362.

inches of the surface for long duration. By long duration, Martin means 15 consecutive days or longer in the course of a growing season. Twelve and a half percent of the growing season in consecutive days, meets that wetland hydrology criterion. Tr. 384. When water is at or withi[40]n 12 inches of the surface for *between five and 12 percent* of the growing season, the Corps goes to the field to see if there is corroboration for the presence of wetland hydrology. Tr. 388.

Martin also visited the Site on January 24, 2007. The path the group traveled at the Site on that date is reflected on CX 309, SF Remand 939, with the yellow lines showing the route on the Suffolk side and red lines their route on the Chesapeake side. Tr. 390. Martin took data points at that time, sometimes doing a soil profile and at other spots considering vegetation identification and surface roughness. Martin showed his soil samples as well as his plant identification to Mr. Wolfe while he was doing these tasks. Tr. 393. During this, Wolfe, and Mr.

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[40]The parties spent considerable time during the hearing upon remand on the subject of determining wetlands hydrology by examining 1999 well data. CX SF 445. There was much controversy over the correct date to apply for the start of the growing season at the Site. EPA, through the Corps, applied March 8th as the applicable start date, while the Respondent asserted that March 14th was the correct date. While only a week's difference, it was important to the parties because the earlier date shows a longer period of water inundation or saturation to the surface than would apply if the later date is used. Showing consecutive days of inundation for 12.5 % of the growing season is a way to establish the presence of wetland hydrology, as long as the soil and vegetation indicia (i.e. hydric soil and wetlands vegetation) are also present. In addition to the parties' controversy over the correct date to be applied for the start of the growing season, a sub-argument arose as to whether the water has to be at the surface for that period or whether it only has to be within 12 inches of the surface. As one might expect, the Respondent asserted that the soils must be saturated to the surface, while EPA (and the Corps) maintained that the appropriate measure is within 12 inches of the surface. Having considered the record evidence and the parties contentions on this issue, the Court finds that for 1999 the correct start date for the growing season was March 8th. Further, the Court finds that 'leaf out' is not, as Dr. Pierce contended, the determining factor to establish the start of the growing season. Instead, growing season is measured by the start of microbial activity in the soil. Further, there is some reliability to the date selected as it established (and periodically revised) by determining that the temperatures for the particular area did not drop below 28 degrees for five years out of ten. More importantly, these parameters, when met, establish wetland hydrology, but they are not the exclusive means to make that determination. For example, if well data reveals marginal hydrology, such as by showing water within 12 inches of the surface, but for only 5 to 12.5 % of the season, further study is necessary. That further study means that the Corps goes to the field itself to see if there is corroboration for the presence of wetland hydrology and that is what occurred here. Thus, wetland determinations can be, and were, made apart from the growing season assessment. Nothing presented at the hearing on remand operated to undermine the determination made by Judge Charneski at the initial hearing that the forested portions of the Site are wetlands.

Rhodes, had the opportunity to object to Martin's findings. Tr. 394. Thus Martin shared all his observations and findings with the Respondent's representatives who accompanied him. "Appendix A Plot Data Smith Farms Site" is a typed version of Rhodes' notes from that visit. CX SF 310, Tr. 396. Photos such as CX SF 280 and 281, dated January 24, 2007, taken south of the Tulloch ditch that is connected to Drainage No. 7, show an extensive area of ponding or flooding. Tr. 400-401. Additional photos, such as CX SF 282 and 283, clearly support the government's other evidence that the Site is a forested wetland. Thus it is not surprising that Data Point 1 revealed hydric soil. Tr. 411.

Martin, who as mentioned, is trained in HGM, explained that it uses the concept of a comparable wetland reference site. Tr. 441. Martin and Stokley chose the Shoulders Hill preservation site as a comparable site. Tr. 442. Like Smith Farm, it sits on a drainage divide and both Smith Farms and Shoulders Hill show depressional areas. Tr. 444, 453. Tr. At the Shoulders Hill site, Martin took samples, just as he did at Smith Farms. Mr. Rhodes and others were with Martin at this time. Martin opined that the two sites were comparable sites. Tr. 454, 456. The Court finds that to be the case as well.

During Martin's April 18, 2007 visit to the Site one of his purposes was to "see if there were connections between wetland areas on the property and drainages extending off the site either through the western end of the property on the Suffolk side or eastern end of the property on the Chesapeake side. Tr. 458-459. A week before his visit there was 24 to 36 hours of rain, amounting to slightly less than 2 inches. However, as of April 18, 2007, the preceding three months of rainfall was considered to be dryer than typical. Tr. 462. In any event, on that date Martin observed water, as depicted in CX 346 and 347, flowing towards drainage no. 6. Tr. 478. *See also* CX SF 387, which documents the location of photographs that Martin took on April 18, 2007 at the Site. Tr. 463. (CX 330 and 331 are photographs of data points that Martin took at that time, with CX 330 having hydrophytic vegetation and hydric soils and water within a few inches of the surface.) Martin physically traced the drainages from the property downstream by actually walking them. Tr. 514. Thus Martin walked drainages 6 and 7, which converge, and walked from there "all the way to the tidal limits." Tr. 516. For drainages 1, 2, and 3, Martin walked those from the point where they meet Portsmouth Boulevard downstream. Tr. 516. For 2 and 3, he walked portions of those drainages. Tr. 516.

EPA witness Charles A. Rhodes has a masters degree in environmental science and forestry and an undergraduate degree in biology. He has also taken courses in wetlands and wetland ecology and was qualified as an expert in the field of wetland ecology. Tr. 659. Rhodes experience includes having visited about a hundred thousand acres of wetlands during his career. Tr. 704. In fall of 2006 he was asked to provide an opinion regarding the Site. Rhodes then visited the Site twice, in January and again in April of 2007 for the purpose of assessing whether ecological functions were being performed on the Site and wetlands and whether they were being delivered to navigable waters. Tr. 659, 667.

Based on his visits and review of a wealth of material pertaining to the Site and the

nearby area, Rhodes determined that the Site, which is located on the Virginia Coastal Plain is part of the Mid-Atlantic Coastal Plain, had wetlands which were a combination of hardwood flats on mineral soil with headwaters. Tr. 663. Its wetlands are not tidally influenced. Tr. 664. Focusing on the forested wetlands at the Site, Rhodes concluded that the wetlands appeared typical to the other forested wetlands on mineral flats that he has observed in his experience. Tr. 669. So too, Rhodes stated that the wetlands at Shoulders Hill also appeared typical to the other forested wetlands on mineral flats that he has observed in the Mid-Atlantic.[41] Rhodes, who is also trained in HGM, explained that it involves a three-part assessment. He made those HGM assessments and concluded that the Site's wetlands do provide ecological functions that are delivered from that Site to navigable waters.[42] Tr. 674.

As expressed by Rhodes, because of the Site's "hummocky microtopography," there are highs and lows in the lay of the land with the lows acting as short-term water storage areas. The Site's hydric soils also help in this regard, acting as "shock absorbers," to slow water's exit from the Site. Tr. 677- 679. Accordingly, the Site provides flood moderation and storm water retention. Tr. 686. Another benefit is denitrification. Under that process nitrates in the precipitation become converted from an oxidized form to a reduced form and then they are released into the atmosphere. This is a better result for the waters than having the nitrates simply flow downstream, unreduced, from the Site. Tr. 681. See also CX SF 313, Rhodes Report.

Witness for the Respondent William Thomas Straw, has a doctorate in hydrogeology and geomorphology from Indiana University and is a certified Professional Wetland Scientist who has studied wetlands across the United States. Tr. 787. He specializes in hydrology that deals with wetlands, rivers and streams and was qualified as an expert as a "hydrologist with specific areas of expertise in wetlands hydrology, wetland biogeochemistry, ground water geochemistry, stream biogeochemistry morphology, topographic maps, wetlands assessments, climate analysis and aerial photography interpretation. Tr. 788, 795. His first association regarding the case occurred in late 2006. Tr. 796. Straw's visits to the Site were on two occasions, in January and February 2007. Tr. 1000. Although he visited many areas at the Site, he did not go to the interior of the southwest quadrant and therefore his knowledge about that area is limited to photo interpretation. Tr. 1003.

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[41]Rhodes was unwavering in his view that the Shoulders Hill site is very similar to the Smith Site, both are multi-strata forested wetlands, with similar microtopography, similar vegetation, but with slight variations in community dynamics from place to place. Tr. 736. Shoulders Hill also has at least two ditches around its perimeter.

[42]Despite the cross-examination attempts to show Rhodes lack of familiarity with some details, such as the exact number of acres on the Site and at Shoulders Hill, the Court notes that his task did not require that information, as the purpose was "to determine whether ecological functions were being performed on these sites and delivered downstream to navigable waters." Tr. 741.

Dr. Straw was asked to describe the drainages from the property. With the aid of a demonstrative exhibit,[43] he identified the master ditch or drain at the Site, along with other ditches, concluding that water flows from those interior ditches to the marginal ditches then into the master ditch and then exits to the west. Tr. 821. Thus, he expressed that water from those ditches would flow into what he calls the master (i.e. the main or east/west) ditch, then flow to the west and then underneath the railroad tracks. Dr. Straw also agreed with the characterization that as to drainage from the flag shaped, smaller, field, all the water from that field, and the ditches, flows into the ditches circling that field and end up in the main east/west ditch. Tr. 824. In contrast, flow from the interior ditches of the agricultural field goes to the boundary ditches then south into the south marginal ditch and then exits the property at the southeast corner, which is to the east. Tr. 823-824.

Straw maintained that as to water flowing from the northeast quadrant on the property there was a drained area adjacent to the east margin of the flag shaped field and that the National Wetland Inventory map shows this as drained. He described this as an L-shaped area of drained soil. Straw also asserted that these ditches would have impacted the surface water. While he conceded that an area east of the flag shaped field *may* have been a wetland, he asserted it was now isolated from the drainage by this band of drained soil. Tr 826. Thus, Straw's effort was to show that the Site is an isolated wetland. Straw also contended that the ditches that run around the perimeter of the northeast quadrant had the effect of successfully draining the land and breaking up any continuation of wetlands, making them isolated wetlands. Tr. 827. Accordingly, it is Respondent's claim that there were no continuous sections of wetland between the northeast quadrant and any other quadrant on the Site.[44] Tr. 827.

Dr. Straw disputed Stokley's interpretation of the flow of water across the Site, per EPA Exhibit 1073, and did not agree with Stokley's view of the drainage that falls on the northeast quadrant pre-disturbance. Tr. 832. Straw took the position that the flow could not get to the southeastern quadrant because of the master ditch, nor did he see any slope that would create a direction for such flow. Tr. 832. He also concluded that there was no overland flow occurring because he saw no rills.[45] Tr. 834. Speaking to Respondent's Exhibits 10 and 11, and elevation markings on them, Dr. Straw expressed that those exhibits are much more detailed than CX SF 111. Tr. 873. Straw also contended that he found drainage features on Respondent's Exhibit 74,

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[43]Respondent's Exhibits 10 and 11, maps which display large parts of Smith Farm, and used to simplify the Site as it now appears, were used for this purpose. A composite map, it was created from a number of other, more accurate maps and used as a demonstrative exhibit. Tr. 810- 818.

[44]Even if the Court were to accept Dr. Straw's contention, which it does not, any attempted Tulloch ditching which had a draining effect would not be considered because that ditching was not carried out within the strictures of that such ditching, rendering it unpermitted.

[45]"Rills" are the first water flows across the land surface. Under this process, rivulets will cut tiny channels, called "rills."

Figure 17 that were absent from EPA Exhibits CX SF 111, 1070, and 1073. These asserted drainage features, in the southwest quadrant, were described by him as hand-dug ditches. Tr. 875.

There is no dispute but that ditches will drain adjacent land, but the efficacy of ditch draining will vary according to the particular conditions, such as the type of soil. Tr. 878. It was Dr. Straw's position that the ditches have been effective at the Site because the aerial photographs show they have drained the agricultural fields. Tr. 880. Based on other evidence of record, as discussed *infra*, the Court does not accept Dr. Straw's view as pertinent to the forested wetlands.[46]

Referring to the northeast quadrant,[47] Dr. Straw expressed that water flows from wetland areas there and then off the property, but that there is a drained area on the west side of the northwest quadrant and along the south side of the northwest quadrant. Tr. 933-934. Straw went on to assert that water in isolated areas must make it across the drained area into the master ditch. Tr. 934. He believed that such water could only make it across that area as sheet flow, but that can no longer occur because of the Tulloch ditches and the smaller ditches that were constructed in 1998. Tr. 935. However, even assuming for arguments sake that for this part of the Site that Dr. Straw was correct and that the area was drained to prevent water from reaching the master ditch, he admitted that this would be due to the illegally constructed Tulloch ditches. In the Court's view this testimony reinforces EPA's contention that prior to the ditching, water traversed this area.

After the Respondent's "Tulloch"[48] ditching, Straw expressed that water from the northeast quadrant now goes into the master ditch. Tr. 938. As it runs contrary to the wealth of evidence, the Court does not adopt Straw's conjecture that before the attempted, but improperly executed, Tulloch ditching, "most" of the water left that part of the Site through evapotranspiration and ground infiltration. Tr. 938.

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[46]The issue here is not about the effect of ditching on the agricultural fields. Indeed, one never gets to the issue of ditch draining efficiency if the ditching itself was improperly performed, as in this case.

[47]Dr. Straw did not agree with the statement that there is a "dramatic" wetland signature in the northeast quadrant of the Smith Farms site, even though that view was expressed by another expert witness for the Respondent. Tr. 1048. Instead, he preferred to characterize it as a "pronounced" signature. Tr. 1050.

[48]As mentioned, calling the Respondent's activity "Tulloch" ditching is a misnomer, because it implies that the ditching was done appropriately, not in violation of the CWA. The issue of the appropriateness of the ditching was one of the original issues in the case and it was resolved at the first hearing with Judge Charneski's finding that the discharge of the wood chips was beyond the allowable procedures when one attempts to use Tulloch ditches.

Speaking to Respondent's Ex. 74, at Figure 17, which is a 1949 aerial photograph, Dr. Straw stated it shows water flows west in the master ditch, and then goes under the railroad and Shoulders Hill Road and "*joins a tributary*[49] *of Quaker Neck Creek*." Tr. 956. Although Dr. Straw stated that the wood chips "that were *put on* the northwest quadrant, the northeast quad, and the southwest quadrant . . . [could not] have altered the flow of water at [the Site]," the Court notes that is beside the point, as alteration of flow is not an element in establishing this violation. Tr. 957.

In what the Court views as an attempt to undo some of the testimony from Dr. Straw that was damaging to the Respondent's contentions, Counsel asked the Doctor if he forgot to mention some factors for determining if there is a significant nexus between this property and navigable waters. Tr. 960. But whether Dr. Straw's response helped Respondent's case in this regard is questionable, as he stated that: "a significant portion [of the water] occur[s] in those ditches . . . if we're considering *water that comes from this site goes to Bailey's Creek and thence to navigable waters*." Tr. 961(emphasis added). Since the water is rainwater, Straw characterized it as "about as pure as water gets," and he considered it "*virtually impossible to sort out the tiny effect that water from any of the wetlands on this site would have on navigable waters after going first through [the] drainage system, then into the sizeable wetland that's in Bailey Creek*." Tr. 961. (emphasis added). All of this, in the Court's view, shows that the Site's wetlands are not isolated and that there is a significant nexus between the Site and, ultimately, to navigable-in-fact waters. Further, Straw helped establish that water flows away from the Site, noting that at the southeast corner of the farm field the elevation is 19 feet, but that it drops to 15 feet, where "the water in that creek goes under Portsmouth Boulevard and empties into a tributary of Bailey Creek," a drop he characterized as a "significant change." Tr. 962. That was not all, as Straw noted that a similar drop occurs "from the pond at the northwest corner of Smith Farms . . . where the water goes under the railroad, across Shoulders Hill Road, [and] into a tributary of Quaker Neck Creek."[50] Tr. 962.

There are other reasons to discount Dr. Straws' views, although the Court considered Dr. Straw to be an honest, though mistaken, witness. For example, he conceded that he got it wrong in his report as to swales and slight rises, misinterpreting aerial photographs, by thinking that dark areas were low and light areas were high. Dr. Straw conceded his report's reference to "long swales and slight rises" was erroneous. Tr. 1006. Therefore what he thought were elevation

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[49]On redirect, Straw explained that his use of the term 'tributary' was only intended to mean a stream that enters into a larger stream. Tr. 1063.

[50]Respondent's contention that "the non-wetland areas and the drained wetland areas have a larger flood storage potential than the wetlands themselves," is irrelevant and a distraction because, whether true or not, it is not up to the Respondent to make their own value judgments and effectively privately legislate which wetlands are valuable vis-a-vis competing non-wetlands. Certainly Congress never contemplated such an arrangement that competing value judgments of that nature should come into play in applying the Clean Water Act. Tr. 968.

differences in the aerial photos, in fact were not. Tr. 1005. In what the Court considers to be an insufficient excuse, this 'correction' offered by Dr. Straw, did not find its way into his expert report because, he stated, "we had committed ourselves to the prose in our report." Tr. 1006. Thus, the "prose" in the Respondent's Report, though wrong and recognized as such, trumped accuracy. Sacrificing accuracy for 'prose' in the collaborative report issued by the Respondent's post-remand experts, casts a pall over the entire report. It must also be stated that Dr. Straw's knowledge of the Site was limited, both in terms of the time he spent there and that his visit was temporally 'late in the game,' not occurring until some eight years after the offending ditching activity.

Again, while the Court has respect for Dr. Straw and for the honest, though incorrect views, he expressed, that is distinguished from the Respondent's report, RX 74, 75, which was a collaborative effort, not simply Dr. Straw's work. As Dr. Straw himself conceded, there were many inaccuracies in that report. These include Straw's admission that although the Respondent's Report used the term "integrated stream system," that is, a system that drains an entire area, that term does not apply to the Site. Straw acknowledged that the Site does hold water on occasion. Further, while the Respondent's collaborative report asserts that the Site can not support a wetland, Dr. Straw admitted that there are wetlands at the Site and consequently that the Report was inaccurate in making that claim. RX Remand 75. Tr. 1017. In still another contradiction, Straw says he does *not* agree with the statement from their report which claims it is "doubtful that even prior to the activities in 1999 that the wettest part of the landscape at the Smith Farms site would have had saturated soils for an appreciable part of the year." Tr. 1020. The best Dr. Straw could do was to state that the assertion was made by Dr. Pierce, a collaborator, and the "team leader"[51] for the report.[52] Tr. 1021.

Although the Respondent had earlier contended that a recent rain event could distort a wetland signature, Dr. Straw did not offer unqualified agreement to that claim, stating that would depend on many things and consequently that it would be impossible to give a "clear answer" to the hypothetical. Tr. 1032. Dr. Straw also admitted that he has seen water in the Tulloch ditches

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[51]Pierce agreed that, in developing the Respondent's Report for the remand, he was the "team leader," among Dr. Straw and Mr. Parker. Tr. 1595.

[52]Yet another example of the tendency of the Respondent's Report to use, to put it politely, inaccurate phraseology, appears at page 30, where the claim was made that the wood chips would have been taken up quickly, in a matter of months. Yet, when Dr. Straw was advised that Dr. Parker testified at the first hearing that he would expect to find the wood chips some two and a half years after they were deposited, Dr. Straw offered only that "months" of the decay process could be *60 months*, or as it is more commonly called, five years. Tr. 1023-1025. Still another problem for the Respondent's report is the contention that analysis of root mass can tell one whether or not an area has been drained, as Dr. Straw conceded that there is no peer reviewed literature to support that claim. Tr. 1028-1029.

at the Site. Tr. 1033. Regarding root zones, although he agreed that different types of wetlands support different types of plants and that there could be different root zones, he admitted that he never did a baseline survey of the depth of the root zones at the Site. Tr. 1034. While Straw testified that he has been in wetlands where the root zones are only two inches, he effectively conceded that he didn't find any two-inch root zones at the Site, by stating he only looked at rooting on wind thrown trees and his reference to finding two-inch root zones was in a grassland, and that the Site in issue here has no grasslands. Tr. 1034.

Straw also conceded that the main portion of Drainage 5 is not on Respondent's Remand Exhibit 79, as it is off that map. Tr. 1035. Thus, neither side's maps were completely flawless. Further, he agreed that the Site sits on a drainage divide, and consequently that some of the water at the Site flows east and some of it flows west. Tr. 1037. He also recanted with his earlier description that Drainage 1 looked as if it hadn't flowed in a long time, as he conceded that he had no way to quantify how long he meant. Importantly, he added that when he viewed it "[i]t was a muddy ditch, [and] still had a sticky look to it. . . ." Tr. 1037. Dr. Straw also agreed that it *is* possible for precipitation to fall on a site, have it lie in depressions on it, be soaked into the soil, and then gradually released from the site and that this is a common process. Tr. 1047. Straw also conceded that at EPA 1073, figure 4, and at the northeast and southeast quadrants of the site, that Stokley's blue arrows track the pronounced wet signature[53] that Straw previously identified on CX 441 and that the signature is on both sides of the main, east/west, ditch. Tr. 1057.

The Respondent also called William Blake Parker, who testified in the earlier hearing in this matter, and was qualified then as an expert in soil science.[54] Tr. 1112. After reaffirming the uncontested point that a non-hydric soil is not a wetland soil, Parker stated that he has been at the Site on two occasions, once in March 2002 and again in 2007. Tr. 1119. During his 2002 visit, he took 55 soil samples, spending most of his time looking at the soils adjacent to the Tulloch ditches. On his second visit, occurring in 2007, his purpose was similarly narrow, as he looked at areas on the property that were nonhydric. Tr. 1121. Given the predetermined purpose of finding nonhydric soil, it would have to be said that the second visit was successful, as 15 of the 17 samples were found to be nonhydric.[55]

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[53]The Court finds that Stokley's characterization of the 'wet signature' of the Site is accurate. Thus, such a signature exists both in the farm field portions of Smith Farm and in the forested wetlands. Tr. 251-254.

[54]Parker wrote the soil section of the Corps' 1987 wetlands delineation manual.

[55]The Court expressed its concern that, as Judge Charneski made a prior finding of fact that the March 2002 samples were too old to be informative regarding the issues in the case, it seemed that findings made in 2007 would suffer even more from that shortcoming. So too, the witness' view that EPA took an insufficient number of samples, is a matter already ruled upon by

Parker agreed that when he took samples in 2002 he employed transects and took 55 samples at that time, of which 53 were hydric. Tr. 1161-1162. Parker also agreed that most of the soils he described were "sandy loams"[56] within the textural triangle and not 'sandy soils.' Tr. 1165. In contrast to his 2002 methodology, he conceded that he did not employ transects when he took his February 2007 samples. Tr. 1168. While he said he was not sure, the Court finds that in fact when Parker made his February 2007 visit he "had a plan of where [he was] going to sample before [he] ever got to the site." Tr. 1168. Thus, it is the Court's view that the February 2007 visit essentially was a staged event as Dr. Pierce had already gone to the Site and picked out areas where he thought there would be non-hydric soils. Tr. 1169. Although Parker described that his "primary purpose really [was] to say I don't think this whole site is a wetland and I don't think this whole site is all hydric soils, so I'm going to satisfy myself yes or no . . . ," the fact of the matter was that in total, he looked at 72 soil profiles, a record number in his estimation, but that at the end of that process, 55 of those *were hydric*. Tr. 1170 - 1171. Further, Parker conceded that with his first visit, the majority of the samples he took along the Tullock ditches were hydric. Tr. 1174. Though he maintained that no transects were necessary for his second go-round at the Site, and even though he agreed that transects eliminate bias, still that was not employed by him in the second visit. Tr. 1175. The reason he offered for failing to use transects in 2007 was suspect, as he only described them as being "too time-consuming." Tr. 1176.

For the remand, Respondent also employed Dr. Robert J. Pierce, an expert "on aquatic and terrestrial ecology, on wetlands, . . . including delineations, vegetation, soils, hydrology, aerial photointerpretation, sampling techniques, functional assessments, on regulatory policies that relates to wetlands and the Clean Water Act, on mitigation design regarding wetlands, on hydrology, on bioengineering and erosion control, on bioassay chemical toxicity testing for dredge material and for fish and other mammals as they relate to wetlands." Tr. 1210-1211.

Dr. Pierce first visited the Site in January 2007. It was his view that: "the area [to the east] before it reaches the Smith Farm . . . goes through nonhydric soils which means that it was separated from the other wetlands that are identified as being parts of Bailey Creek. Tr. 1230-1231. In other words, Dr. Pierce assessed the Smith Farm Site to be an upland which is surrounded by wetlands. In a sense, it would be fair to describe Dr. Pierce's assessment of the Site as an 'oasis' but *surrounded by upland*, and that the Site's isolated wetland along with its surrounding upland, together sit in the middle of surrounding wetlands. While he conceded that the NWI shows connected wetlands, it was his view that on the west side of the property wetlands there come up to nonhydric soils and so the map, he asserted, is wrong in that regard.

Judge Charneski and would not be subject to revisiting by the Court here, absent new evidence on the issue. Tr. 11151-1152. In any event, as Rhodes stated, and no one contended otherwise, it is not unusual to find non-hydric soils within larger wetlands. Tr. 704.

[56]"Sandy loams" are a mixture of sand, silt, and clay and they are classified as 'loams.' Tr. 637, 1579.

Tr. 1238. He maintained that this conclusion was reached on the basis of his ground examination of the soils. Tr. 1238. For the east side, he reached the same conclusion, namely that wetlands at the Site are adjacent to nonhydric soils, meaning that there is no continuous swath of wetlands.[57] Tr. 1238. As EPA points out, apart from the obvious lack of objectivity in the visits to the Site after the order of remand, even Dr. Pierce's finding of some non-hydric soils is underwhelming, given the record from the first hearing, and the fact that it is not uncommon to find pockets of non-hydric soil within a wetland.[58] The only connection he acknowledged to adjacent wetlands was between the ditches on the Site and the wetlands, but he asserted the ditches are not continuously flowing. Tr. 1240. So, if continuous flow were the test for jurisdiction, Pierce contended that there are no such connections between water bodies or wetlands on the Site and navigable waters. Tr. 1240.

Pierce offered his view of the "functions performed by the wetlands on Smith Farms and their significance, if any, to navigable waters" prior to the ditching activity in issue in this litigation, opining that the Site's wetland's "probably provided little direct function to navigable waters [and instead] serve[d] localized functions . . . [such as] habitat for organisms, . . . minor

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[57]In a lengthy period of direct examination, Dr. Pierce went through a number of aerial photographs, all in his attempt to show wetlands were either drained *before* the Respondent's ditching activity in 1999 or that the wetlands were not connected or that they were otherwise inconsequential. Regarding soil samples, Pierce unabashedly stated that "the data we collected in 2007 regarding soils was primarily towards identifying areas with nonhydric soils." Tr. 1281. This is not exactly the way an objective scientist would approach the issue. Pierce went on to explain that the "soils samples that we had from Appendix C [part of Respondent's Ex. 74] gave us areas to examine on the aerial photographs where we knew there were nonhydric soils. And if you look at the overall display, it shows not blocks, but areas where there's nonhydric soils. And then we could then compare the soil - - the aerial photograph signatures and see whether those signatures were like or unlike other signatures on the aerials." Tr. 1291-1292. Understanding this, Respondent's Counsel asked if Dr. Pierce then did exactly that, i.e. compare the aerial photograph signatures and see whether those signatures were like or unlike other signatures on the aerials. Yet, Dr. Pierce conceded "No, we did not, to [his] recollection, did not produce actual figures that show that process that was used during our evaluation process." Tr. 1292. Thus, given the value he ascribed to such a process, it was quite odd that Pierce did not carry out such a comparison. That lack did not stop Pierce from forming his conclusion however. That conclusion was that "much of the area that was ditched prior to 1998 had either nonhydric soils or hydric soils that had been drained and did not qualify as Section 404 wetlands." Tr. 1294. While Respondent's RX 74, Figure 12, asserts that nonhydric soils encircle the ditches leading off Smith Farm to the west, Martin took a soil sample closer to the channelized drainage feature than the NHS points depicted in Figure 12 and found "hydric soils and free water within a few inches of the surface." Tr. 1894 -1895. Assessing the relative credibility of the witnesses on this issue, the Court finds Mr. Martin to be the more credible witness.

[58]EPA cites to the Remand transcript at 1962-63 (Vasilas) and 704-706 (Rhodes) on this point.

levels of denitrification, . . . [and] minor levels of water storage . . . ." Tr. 1248 -1249. He also was of the view that there was only a small probability that the wetlands contributed some particulate matter downstream and not much groundwater recharge and little opportunity for contaminant or nutrient removal. Tr. 1249.

Speaking to the relationship between the east-west master ditch and the 1999 ditches dug by the Respondent regarding water leaving the Smith Farms site, it was Pierce's contention that any water in the 1999 ditches would flow through ditches created before 1999 in order to leave the Site, and that all those preexisting ditches flow at least at some point through nonwetlands and nonhydric soil. Tr. 1301. Thus, Pierce's view is that the Site is a "naturally isolated wetland [which is] not immediately adjacent to a navigable water."[59] Tr. 1301.

Pierce stated that while the NWI records that the master ditch travels through wetlands, in his view, aside from the bottom of that ditch, none of that ditch travels through Section 404 wetlands. Tr. 1396. Acknowledging his view put him at odds with the NWI maps, he asserted that even those maps reflect that the master ditch travels "at least in a small area" through nonwetlands on the Site. Tr. 1397. He also opined that the Great Dismal Swamp is not part of the Site because it is physically isolated from it. Tr. 1455. Pierce also took issue with Stokley's report which claims that "the wetlands extend in a . . . unbroken swath . . . north and east into the drainages of Bailey Creek and west to Quaker Neck Creek." Tr. 1459. Pierce contended instead the Site is broken between a series of wetland and nonwetland areas and by roads, agricultural fields, and buildings. Tr. 1460.[60]

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[59]While Pierce asserted, relying on Figure 21 from his report, that none of the drainages actually came up to the Site, he admitted that even a 1920 topographic map shows drainage coming up to the property, as does a 1955 USGS quad map. Tr. 1583. Figures 2 and 5 from CX Remand 125. Pierce agreed that the channel alignment in the western area of the Site that exists as of 2007, except for the sediment retention pond, is the same as was excavated prior to April 9, 1949. Tr. 1617.

[60]Figure 30 of Pierce's collaborative report. Pierce believed that Stokley should have used a full USGS hydrologic unit of 425 square miles, not simply the peninsula bordered on the west by the Nansemond and to the east the Elizabeth Rivers and by Route 460, Route 13 to the south. Tr. 1463. By using a smaller hydrologic unit, Pierce contends Stokley inflated the potential significance of Smith Farm to navigable waters. The Court does not agree with Pierce's perspective. If anything, it is illustrative of Dr. Pierce's bias in attempting to find any way to diminish the role of the Site's forested wetlands by trying to unreasonably expand the hydrologic unit considered. The natural, and logical, unit is the peninsula where the Site is located. Dr. Pierce's agenda reappeared in connection with the testimony of Respondent's witness Steve Ferguson, a land surveyor, who also testified at the first hearing. Pierce had Ferguson do a topographic survey on a specific transect line through the property. Tr. 1838, 1851, RX 70. A transect is basically a straight line across from one point to another. Tr. 1426. While Ferguson stated that the transect was "consistent with the general area," he admitted it

It is unfortunate that the Court is unable to find Dr. Pierce's testimony or views as credible. Among other reasons set forth in this decision, it is noted that Pierce conceded that at the time he left the Corps of Engineers, after having spent more than 14 years with them, he had done no wetland delineations at all. Tr. 1528. He also concedes having a history of being critical of the Corps' 404 program since he left that organization. Tr. 1528. Other areas raising concern include Dr. Pierce's statement that while he admitted that the nearest navigable in fact water to the Suffolk portion of the Site is a tributary to the Nansemond River, which is part of Quaker Neck Creek and that it is "within a couple of miles," he was unwilling to agree that the distance is only 3,000 feet, stating that he would need to "check it on a map." That he would not know this seems odd, given his study of the area. Similarly, when asked about the nearest navigable in fact water on the Chesapeake side of the Site, he was vague, stating: "It is down [somewhere on] Bailey's Creek." Tr. 1586. Further, although in Pierce's Report, he refers to "waters that are tidal but not navigable," he admits that the Corps has always considered tidal waters to part of Section 10 waters and navigable in fact or traditionally navigable waters." Tr. 1587. Thus, he admits that his Report should not be read to suggest that tidal waters are excluded from the definition of navigable in fact waters. Tr. 1587. He also conceded that, upon being referred to RX 74 at appendix C, that exhibit does not identify a *single* point of hydric soil. Although he admitted that they in fact found such hydric soils, his admission that they did not record them, nor did he 'click' on his GPS unit to record those hydric soils, is reflective more of one intent on reaching a particular result and less about one making the factual determinations that usually guide professionals. Tr. 1620. Other examples of Pierce's lack of objectivity include the Respondent's Report and its reference to Point B. Report at page 51. When presented that EPA Sample Point B (Reference Plot B) was identified as a wetland in the prior hearing in this matter, Dr. Pierce stated he would not accept that as accurate based on his data sheet. Tr. 1588. Indeed, Respondent's own witness at the first hearing, Mr. Needham, agreed that Sample Point B was in wetlands. Pierce also disagreed with prior testimony that the extent of wetlands on the Site were largely consistent with NWI mapping and that it had been ground truthed, asserting that such testimony would have been "false." Tr. 1594.

Dr. Dennis Francis Whigham was called as a rebuttal witness for EPA. Tr. 1663. Dr. Whigham is a "Senior scientist and deputy director of the Smithsonian Environmental Research Center. Among many achievements and areas of expertise in wetland issues, he worked on the development of HGM (hydrogeomorphic) approach to wetland assessment. Tr. 1668. He has developed guidebooks on various types of wetlands, has worked on flats in the mid-Atlantic region, published, with others, on the subject of floodplain vegetation of headwater streams in the intracoastal plain of Virginia and Maryland, done work in the Nanticoke River watershed, including analysis of mineral flat wetlands in the Nanticoke watershed. Appropriately, Dr. Whigham was established as an expert in wetlands functional assessment and wetlands ecology. Tr. 1672.

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differed from the subject of this litigation, the wooded areas at the Site. Tr. 1852.

Dr. Whigham was asked to assess Smith Farm and did so on April 18, 2007.[61] Tr. 1674. He formed a professional opinion on the characteristics of the Site, and specifically looked at connectivity between the Site and other waters. During Whigham's walk through the Site, he was accompanied by other government representatives as well as with a representative of the Respondent, Mr. Charles Wolfe. Tr. 1713. He began his assessment by starting at one of the streams[62] that entered the Site from the west and from there walked further into the Site. Tr. 1675. He then did the same process, from the eastern side of the Site. Tr. 1676. CX SF 442 is Whigham's annotation of an aerial photograph, showing the locations of the photos he took while making his evaluation of the Site. Having read reports and exhibits from the prior hearing, Whigham realized they were conflicting, as one point of view was that the Site was "rather wet" while other reports indicated that "it was not a wetland at all." For this reason, his personal Site visit was very important. Tr. 1678. Referencing CX SF 387 and 388, and 391, Whigham began his recounting of the observations he made with the location where water leaves the Site before it travels under the highway. There, he noted a tea or tannin color in the water.[63] Tannins, he noted, are indicative of a dissolved organic carbon and possibly organic carbon." Tr. 1681. Such dissolved organic carbon, when it goes further downstream, especially to the estuary, provides a source of nutrition for bacteria, plankton, and phytoplankton. Tr. 1683.

Among the many photographs[64] he took, some showing ponding and others showing water flowing, he also observed, in an instance of flowing water, "foam on top of the water . . . [and] coarse material that had been captured by the plants in the ditch forming a debris pile." Tr. 1689-1690. Foam occurs where dissolved organic matter has water flow over it. Tr. 1690. Among the photos, CX SF 396, showed more water flow on the Site's side of railroad tracks, while no water was flowing on the other side of the tracks. This informed Whigham that the water had to be coming from the Site. Tr. 1692.

Walking along the Site's ditches, Whigham observed ponded water near ditches, which informed him that the ditch was not effectively draining the adjacent land. As Dr. Whigham

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[61]In making his assessment of the Site, Dr. Whigham also examined Stokleys and Rhodes reports as well as Respondent's Exhibit 74. (RX 74)

[62]Dr. Whigham used the term 'stream' as a general term, acknowledging that others call it a 'ditch.' His point was that he began at a location where water was flowing off of the Site.

[63]Dr. Whigham, aware that there had been a two-inch rain in the week before his visit, took that into account in making his observations.

[64]Beginning with the photos numbered 419 and higher, those photos were taken on the east side of the property. (All photos 418 and less were from the west side of the property.) Tr. 1715.

expressed it, “if the surface has a lot of standing water on it or if it's wet to the surface, it means that the soil is not very permeable; that water is not moving very quickly from the surface through the soil and then laterally out from it.” Tr. 1698. Another notable photograph, CX SF 403, was taken near a ditch, or drainage channel, and it showed the confluence of a ditch together with the remnants of the natural stream. Tr. 1701. Whigham also photographed sphagnum along his route, stating that its presence is typical where water has been standing for long periods of time. Tr. 1702. Dr. Whigham advised that during his walk through the Smith Farm site, he was looking for tip-ups and root balls, as he had read in the materials concerning the case that this was an issue. In this regard he agreed that trees showing deeply rooted roots suggests that the soils are not very wet, whereas shallow-rooted trees indicate wetland characteristics. Tr. 1708. Significantly, the trees he observed all had shallow root systems. Tr. 1709. As reflected in CX SF 414, a soil sample was taken at that location, which was surrounded by ditches. Yet, despite anticipating that it would be effectively drained by those ditches, the soil was sapric, or a peat, which is found in very wet conditions. Tr. 1712. All the soil samples Whigham observed that day were hydric. The soil morphology, that is, its colors, were also consistent with hydric soils. In fact, he expressed that the only thing that varied was how much sand was present with the silt. Tr. 1714.

As another probative example, CX SF 415, shows a water filled depression with blackened leaves in it. Although this was in an area surrounded by four ditches, Whigham’s observations told him that the soil there drained vertically and laterally very slowly. Tr. 1714. In some areas, on the western side of the property, he also observed overland flow. Tr. 1716, CX SF 442, where arrows are connected to photos 402, 403, 404, 405. Regarding his assessment of the eastern side of the Site, Whigham stated that CX SF 248 represented another water-filled depression between two drainage ditches. Tr. 1715. As Whigham walked the Site, he observed water flowing in every ditch that was connected to the main ditch. Tr. 1716.

Whigham’s personal visit to the Site led him to conclude that, in fact, the Site was not effectively drained. Tr. 1718. In part, this conclusion was based upon his awareness that “there had been a prior rain event a few days before [his visit], and [even though] it was not a large rain event by any standards, [] there was water everywhere on the site. Providing an overview of his visit, he summed up that “there were one or two places where based on the vegetation, they were uplands, but they were minor, and [that on the] sort of random walk through the site, [he] kept seeing feature after feature that were very wet, either depressions that were filled with water or depressions that had leaves which were still wet that had water in them in the day or two prior to, to the visit and just about everywhere we went having soil that was wet to the surface.” Tr. 1718. Dr. Whigham also stated that the soils he examined at the Site had redoximorphic features and mottles.[65] Tr. 1720-1721.

[65]Mottles are usually indicative of the presence of reducing conditions in the soil, that is where all the oxygen is gone. This occurs because “ the microbes using the carbon, they get their energy by using different kinds of molecules. So at first they'll take oxygen and they'll take

When challenged about his ability to trace the source of the tannic material he observed, Dr. Whigham explained that in fact he was able to differentiate the source of it.[66] Tr. 1727. Further, Dr. Whigham stated that, with regard to his observations of water flow at the Site, ". . . that water was tannic-colored everywhere [he] observed it or took a photograph of it [which suggested to him that the] entire landscape was a source of the dissolved organic carbon . . . that was responsible for the tannic color in the water. . . . given that water was flowing continuously in all of the ditches and through the culvert . . . [and thus he summed up that the Site] was the source of the tannic color. . . . [as] [a]ll of the main ditches had tannic [colored] water in them . . . ." Tr. 1732-1735. So too, on the issue of the soil at the Site, Dr. Whigham did not agree that the soils would drain rapidly: "[n]ot these soils. Not the ones I looked at. They had . . . significant amounts of fine material in them so that the pore spaces between the sand grains were filled with these very fine textured organic materials, and that's the reason they drain slowly." Tr. 1742. In sum, defining an isolated wetland as "one that would have no surface or subsurface connections to either other wetlands or water bodies," Dr. Whigham's expressed expert opinion was that the Smith Farm Site is not an isolated wetland. Tr. 1759-1760. The Court agrees.

James M. Boyd, who is the owner of Smith Farm, testified on direct examination as to various areas of development near the Site. These areas, as shown through a number of photographs taken in March 2007, were along Shoulders Hill Road, along Portsmouth Boulevard, and along Gum Road, which is also known as 'Old Joliff Road.' Tr. 1810-1824. The Court finds that these photographs have no significance to the resolution of the issues in this case. In the Court's view, the following exchange captures all one needs to know about Mr. Boyd's testimony. After testifying about all he did to be sure that his activity would be lawful, when asked by EPA Counsel: "Mr. Needham told you you had wetlands in the forested section of the property, didn't he?" all Mr. Boyd could muster in response was "I don't recall whether he said that or not." Tr. 1835. Given the central importance of that issue, Mr. Boyd's response was

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hydrogen. They keep working down through, eventually going through magnesium, and as it gets more and more reduced, the mottling features begin to appear as sort of gray, gray features in the soil." Tr. 1721.

[66]Whigham precisely explained the basis for his conclusion that the tannic material was coming from the Site: "The, based on the rate of flow of this water and based on the fact that when you go to the east side of the culvert which flows under the railroad track, that the water was flowing at about the same rate there, that tells me that the water that I'm seeing in this photograph 391 was continuous with the water that was flowing under the culvert under the railroad. And there were two sources of water that were generating the flow that was going under the culvert. One of them was the ditch that was coming down along the east, east side of the railroad. That was flowing into the culvert that went under. Then the other was, I can't remember the name of the ditch, but the main ditch that was flowing into that pond, that dug-out pond and then flowing from there into the culvert. Those two sources of water made up all the water that was flowing under the culvert." Tr. 1729. The Court credits Dr. Whigham's testimony.

simply not credible at all.

As noted, EPA witness Ms. Lenore Vasilas testified at the initial hearing and was qualified as an expert in soil science at that time. She is employed by the U.S. Department of Agriculture and Natural Resources Conservation in Maryland. Tr. 1949-1950. She prepared CX SF 386, entitled "Hydric Rating by Map Unit Rating for Chesapeake City, Virginia, which is a map of Chesapeake and Suffolk counties (including the Site) identifying whether the soils mapped in the area were hydric soils or other soils. The color-coded map shows hydric soils in a reddish brown hue, green depicting partially hydric soils and blue signifying nonhydric soils. Tr. 1954-1959. Vasilas stated that the map shows that a minimum of 50% and as much as 60% or more is designated as hydric on it, and that at most, only 5 to 10 percent of Smith Farm would be non-hydric. Tr. 1964-1965. The Court notes that although Vasilas did agree that actual soil samples would give more information about the soils at any particular point on the property than the map, that acknowledgment does nothing to diminish her conclusions reached as to the percentage of hydric soils she found, as reflected on CX SF 386.

Recalled as a rebuttal witness for Respondent, Dr. Straw did not agree with Dr. Whigham's statement that his observation of ponded water on the Site could be indicative that the ditches were not effective, because it had recently rained and because there are small depressions where water can collect, even though, in his view, the rest of an area has been adequately drained by the ditch. Tr. 1977. In short, he did not feel that the ponded water amounts to an indication of a lack of drainage and, because soils have 30 days to complete drainage, ponded water remaining for a few days after a rain is not significant. Tr. 1977. Straw also disagreed with Whigham's conclusions about the presence of tea colored water. It was Straw's view in trying to trace the source for this tea colored water that it emanated from a location which was "totally off site . . . [n]one . . . came from the Smith Farms site, as far as [Straw] could determine." Tr. 1979. Straw expressed his own theory where tea-stained water would come from the Site, but in offering his explanation, he unwittingly conceded the presence of wetlands at the Site: "Prior to the time that the lanes were cleared and the tulloch ditches put in, the area where the tulloch ditches were dug, let's begin first with the northeast quadrant. It is my belief that that area, those wetland areas in the northeast quadrant were isolated from the major drainage by bands of drained soil along the eastern end of the Main Ditch, or Ditch 6, and the west boundary ditch of the flag-shaped farm. So that prior to the time that the ditches, tulloch ditches and accompanying finger ditches were dug, it would have been virtually impossible for the tea-stained water to have left the wet -- the areas that appear to have been wet, and gotten into either of those ditches without the water soaking into the ground and the tanic material having been screened out by the soil materials. Now, . . . that northeast quadrant, when the tulloch ditches were put in, they opened up this area of wetland that was there. That area of wetlands had in it materials that would stain water, and probably had stained water in it. So that after it drained and stabilized, they probably -- there probably wasn't much drainage from there. But each time it rained, more was flushed out. So if one had gone there, or went there now, and went to the mouth of one of those drains -- tulloch ditches, that is, the point that it joins the main ditch, I think you would see tea-stained water coming out of there. I don't think that happened prior to

the excavation of those ditches, and I think that would be true of the two ditches in the northwest quadrant and the ditches in the southeast quadrant." Tr. 1981-1982. Upon consideration of the conflicting views expressed by Dr. Straw and Dr. Whigham, the Court has no hesitation but to credit Whigham's over Dr. Straw. This is based upon the Court's credibility assessments of the witnesses during their testimony, upon the infirmities already noted with regard to Respondent's new set of experts, and upon Dr. Whigham's notable experience and familiarity with the intracoastal plain of Virginia, including the Nanticoke watershed.

Dr. Straw discounted Martin's testimony concerning the hydric sample of soil near the area where the railroad or the water flows away from the Site out of the railroad, because that area had been excavated and so he suspected that Martin would have been looking at soil that was really much deeper in the profile. Tr. 1983. However, on cross examination Straw backed away from his supposition and stated that if another expert in this case had testified that tanic-colored water coming off the Site "was a result of natural activities in the wetlands," he would agree with that. Tr. 1988. The key point is that Dr. Straw reconfirmed the presence of forested wetlands. Further, the theory that all these wetlands were isolated is rejected by the Court's assessment of the preponderance of credible evidence in the initial and remand hearings.

FURTHER DISCUSSION

THE ISSUES OF CONNECTIVITY BETWEEN THE SITE'S WETLANDS AND NAVIGABLE WATERS AND 'SIGNIFICANT NEXUS.'

1. CONNECTIVITY

As noted, the fundamental question for this remand is whether the Smith Farm wetlands are physically and hydrologically connected to water bodies that flow away from the site. Although this decision upon remand has already discussed this issue, additional matters raised by EPA and Respondent are noted here.

EPA observes that Judge "Charneski made a finding that the Smith Farm wetlands were physically adjacent and contiguous to water bodies that flow intermittently from the Smith Farm Site." EPA Br. at 23, citing Initial Decision at 25. EPA also finds support for this issue in the

testimony of Respondent's witness Charles Wolfe whose area of expertise is in the "identification of wetlands and the connection of wetlands to other waters." Stipulations of the parties (filed Sept. 8, 2003). In testifying about the hydrologic connection between the Smith Farm wetlands and waterbodies flowing off the site, Wolfe stated: "The wetlands derive water from precipitation events [and that water then] . . . flows in a downhill direction off of the site via . . . [and then through] drainageways [the water] travel[s] downstream into the navigable water . . . ." EPA Br. at 24. Wolfe summed up that the precipitation derived water on the wetlands would eventually flow from there "down into those navigable waters, tidal waters, and bottom land hardwood swamps," and he testified that the wetlands on the Smith Farm Site were contiguous and adjacent to waterbodies flowing away from the Site. EPA Br.at 24 , citing October 2003 initial hearing. Tr. V-11-12, V-116-17, V-119-20.

Thus, the Court agrees with EPA's position that the record evidence regarding water flow from the Smith Farm Site supports its contention that "drainages 1-7 flow downstream to traditionally navigable waters[67] and form relatively permanent geographic features" and that such

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[67]Although the Court agrees with EPA that matters such as woody debris and its decomposition are matters outside of the remand, in speaking to that issue, Respondent's witness Dr. Straw, unwittingly hurt the Respondent's case by stating that for the breakdown of the products of the wood chips "to get to navigable waters, even today, . . . they have to flow through the system of finger ditches, then into the pre-1998 ditches, and then off the property." Tr. 919. *Thus, Straw concedes that such products do have a route to navigable waters.* In addition to his concession about a route for wood chip product to reach navigable waters, Dr. Straw continued: "if we consider just for the moment the southeast corner, it goes through a series of culverts and then enters a small, short tributary to a tributary to Bailey Creek. That's a tributary to the western branch of the Elizabeth River. When it enters that tributary to Bailey Creek, it enters an extensive wetland area. I've walked that wetland. It is broad, and the materials - - the water spreads out, *it joins other water* and spreads out in that wetland area. That wetland area has a lot vegetation in it that acts as a baffle system so that whenever that water enters that wetland, this material that's entrained in it is caught in that wetland and strained out." Tr. 919-920. Dr. Straw also underscored the critical role of wetlands, noting that some peer literature asserts that up to 93 percent of the sediments can be removed by some wetlands. Tr. 920. Further bolstering EPA's case, Straw, continues with that particular wetland, stating that "if we followed [that wetland] down, we would come to Jolliff Road [where] there is a culvert under [that road] . . . which acts as a choke point . . . [and] that culvert will slow it down." Tr. 920. He adds "one of the attributes of wetlands that have flood storage functions is that they have choke points on them so that water is caught above them. *That takes place at Jolliff Road.* Tr. 920-921. Understandably worried and aware of the adverse impact of this testimony, Respondent's Counsel tried to recover by asking Dr. Straw to clarify that the "extensive wetland" he was referring to is south of Portsmouth Boulevard, where it crosses Jolliff Road, which is sometimes referred to as "Old Jolliff Road" or "Gum Road." Tr. 921. While Straw concluded by answering "yes" to the leading question that it was highly unlikely that *intact* wood chips would find their way to navigable waters, the substance of his testimony certainly shows the *connections* between wetlands on the Site which lead, eventually, to navigable

a finding meets the plurality's view that there must be "'relatively permanent, standing or continuously flowing bodies of water,' including man-made features, that form geographic features that are connected to traditional navigable waters." EPA Br. at 27.[68]

The Court also agrees with EPA's contention that "[t]he fact that some portion or all of drainages 1-7 appear to be man-made ditches is not relevant to their jurisdictional status," because they were constructed in wetlands and therefore distinguishable from ditches created in uplands.[69] *See also United States v. Moses*, 2007 U.S. App. LEXIS 18483 (9th Cir. Aug. 3, 2007) (man-made irrigation diversion did not convert a water of the United States to a non-water of the United States).

Although EPA has stipulated[70] that the waterbodies involved here do not flow year round, they contend that does not remove them from jurisdiction, noting that the "*Rapanos* plurality does not exclude from CWA jurisdiction the tributaries on the Smith Farm Site, . . . [observing that] the *Rapanos* plurality specifically states that its opinion 'does not necessarily exclude streams, rivers or lakes that might dry up in extraordinary circumstances, such as drought' or 'seasonal rivers, which contain continuous flow during some months of the year but no flow during dry months,' [and that instead] [t]he plurality left identification of such seasonal rivers to '[c]ommon sense and common usage.'" EPA Br. at 31-32, quoting *Rapanos* at 2221 n. 5 (Scalia, J.).[71]

EPA contends that "[t]he preponderance of the evidence in this case demonstrates that the tributaries to Quaker Neck Creek and Bailey Creek that flow from the Smith Farm Site (i.e., drainages 1-7) flow at least part of the year." EPA Br. at 32. It notes that Respondent's expert

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waters. Tr. 922. That he did not believe that the wood chips, in one form or another, would "negatively impact navigable waters," is beside the point, in terms of the jurisdictional determination under *Rapanos.*

[68]Additional details of the established wetlands-to-navigable waters trail, as set forth in EPA's post-hearing brief, and which the Court adopts as findings of fact, appear in the Appendix to this decision upon remand.

[69]EPA contends that "[n]either the *Rapanos* plurality nor Justice Kennedy's opinion exclude man-made waterbodies from Clean Water Act jurisdiction. . . . [noting that] . . . [d]espite the fact that some of the receiving waters in both *Rapanos* and *Carabell* were man-made ditches . . . neither the plurality nor Justice Kennedy indicated that the [man-made] waterbodies precluded jurisdiction." EPA Br. at 31.

[70]Stipulations of the Parties, filed Sept. 8, 2003.

[71]EPA notes that Justice Kennedy described the plurality's position as requiring "permanent standing water or continuous flow, at least for a period of 'some months.'"EPA Br. at 32, n. 29, citing 126 S.Ct. at 2242.

Mr. Wolfe conceded at the initial (October 2003) hearing in this matter that the water bodies in this case were wet at some point in the year. EPA Br. at 33, citing Tr. V-103-04. It also looks to the testimony of Mr. Martin, who had frequent viewings of the tributaries flowing from the Smith Farm Site to Quaker Neck Creek and Bailey Creek. *Id.* at 33, citing Remand Tr. 328-29. The Court, which, as already noted, found Mr. Martin to have been a highly credible witness, notes that his testimony certainly supports the finding that water flow from the site was relatively permanent and the Court adopts Martin's testimony on this subject as findings of fact.[72]

Given the foregoing, the Court agrees with EPA that "the preponderance of the evidence clearly demonstrates that drainages 1-7 form the type of relatively permanent geographic features . . . [and that] [d]rainages 1-7 have been depicted as intermittently flowing geographic features by the U.S. Geological Service since 1965.[73] EPA Br. at 34. Thus, it is fair to take notice that the U.S.G.S. has identified these as relatively permanent geographic features for decades.

Although Respondent concedes that the Site "does contain a network of ditches that connect eventually, during times of flow, to Drum Point Creek and Bailey Creek . . . [they maintain that] all of these waterways are intermittent. R's Br. at 7, citing RX-34, 52 and 53, Tr. 349, 1225, (Martin), Tr. 329-31, 340-46 and USGS maps. Thus, Respondent asserts that the ditches, as they are only channels through which water flows intermittently, are not 'waters of the United States.' R's Br. at 7. Respondent contends that, read properly, the plurality view requires *a seasonal river* and therefore, a "seasonal flow," "seasonal wetland," or "seasonal ditch" do not

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[72]EPA's Brief accurately summarizes Mr. Martin's testimony on this subject as follows: "During the May 2007 hearing, Mr. Martin testified to his observations regarding flow in the tributaries to Quaker Neck Creek and Bailey Creek that flow from the Smith Farm Site. Mr. Martin observed positive flow in the drainage 6/7 tributary to Quaker Neck Creek on January 6, 1999, March 16, 1999, March 31, 1999, April 5, 1999, April 19, 1999, September 10, 1999, March 19, 2003, December 18, 2006, January 24, 2007, and April 18, 2007. Remand tr. 330 (Martin). Mr. Martin did not observe flow on May 29, 2002. Remand tr. 331 (Martin). On the east side of the Smith Farm Site, Mr. Martin also testified that he saw flow in drainages 1, 2 and 3 on August 3, 1999, February 8, 2000, December 18, 2006, January 24, 2007, and April 18, 2007. He did not observe flow in those drainages on July 15, 1999. Remand tr. 340-41 (Martin). Mr. Martin took photographs of the area south of the Smith Farm site south of the junction of drainages 2 and 3 demonstrating flow. Remand tr. 341-43 (Martin); CX 324 (May 2007); CX 325 (May 2007). Mr. Martin observed flow in drainages 4 and 5 on March 17, 1998, August 3, 1999, November 18, 1999, August 22, 2005, June 2, 2006, August 23, 2006, December 18, 2006, January 24, 2007, and April 18, 2007. He observed no flow in those drainages on May 29, 2002. Complainants' exhibits 322 (May 2007) and 323 (May 2007) depict positive flow in a tributary formed by drainages 4 and 5. Remand tr. 345-48 (Martin)." EPA Br. at 33-34.

[73] Although the Court also considered Wolfe's testimony regarding photographs showing no water flow in those tributaries, these photographs were taken at the end of a drought and do not negate the finding that the subject waters flow "at least part of every year under normal precipitation conditions." EPA Br. at 34, n.30.

suffice.[74] Respondent maintains that water flowing in a "general seasonal pattern" does not constitute the presence of a seasonal river. Respondent argues that EPA's position is that ditches with a permanent drainage pattern are seasonal rivers but that this view ignores the plurality's requirement that "the feature be large – one that would be called in common parlance a river or a stream."[75] R's Br. at 8. The Court's earlier analysis of *Rapanos* addresses these contentions.

Respondent also maintains that, even if such an erroneous, three-months a year standard, were applied, the evidence does not even meet such a test, as EPA's Martin offered only limited first hand observations of flow falling far short of establishing such flow. By comparison, Respondent's witness, Carl Duncan, as the "unofficial caretaker" of the property, "has been on the property an average of two times a week for thirty years . . . . observed all the points at which water leaves the property dry during each and every season . . . [and] observed all exit points from the Property dry during every season both before and after Tulloch ditching. R's Br. at 9, citing Tr. at 1858, 1860-64. The Court does not subscribe to the Respondent's characterization of the value of Mr. Duncan's testimony. A nice enough fellow, the Court finds that the witness is informally beholden to the Respondent and that his focus during his sojourns on the Site were not to assess the extent or frequency of water flows there, but rather to enjoy his walks in the woods. Beyond that finding about the lack of value of his testimony, the many photographs, both aerial and ground, in the record, covering all quarters of the year, refute his claimed recollections.

Respondent also maintains that EPA also did not establish that the "wetlands have a 'continuous surface water connection' with water bodies such that the wetlands and the covered waters are 'indistinguishable,'" and as such, the evidence fails to meet the the second prong of the *Rapano*s plurality test. Instead Respondent contends that the Site consists of wetlands that are "isolated from the water features by non-hydric soils or by hydric soils which have been drained to remove the wetlands hydrology." R's Br. at 9-10. Nor, Respondent maintains, does this Site present any vague situation where it is difficult to determine "where the 'water' ends and the 'wetland' begins." R's Br. at 10. With no "continuous surface connection to bodies that are 'waters of the United States' in their own right," there is a clear demarcation between where 'waters' end and 'wetlands' begin, making the wetlands distinguishable from waters of the United States, and accordingly, Respondent maintains, CWA coverage must fail. R's Br. at 10. Based on the Court's earlier detailed recounting of the evidence, each of these contentions by the Respondent is rejected.

Respondent also contends that "any wetlands are separated from the ditches because areas

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[74]Respondent contends that while Martin originally described a dashed blue line to indicate a 'seasonal' feature, he later amended that claim, stating that such a line indicated that the water flow was intermittent, not seasonal.

[75]Respondent adds that the EPA and Corps post-*Rapanos* guidance simply exaggerates the plurality's statement in footnote 5 of the *Rapanos* decision, by claiming that flow for three months of a year qualifies as seasonal. This interpretation turns one-fourth of a year into "relatively permanent" and "continuous" and equates a ditch to a river.

adjacent to the preexisting ditches have been drained or because the places at which water leaves the Property during times of flow are not wetlands." R's Br. at 10. Describing Drainage 4 and 6 as the two primary outfalls from the Site, and stating that those ditches "go through non-hydric soil," Respondent contends that its experts stated that most water would leave the Site through those drainages and that in so doing that water passes through non-hydric soils. R's Br. at 10-11. Respondent contends this demonstrates there is 'no continuous connection of wetlands or jurisdictional water bodies exists between the Property's wetlands and navigable waters." R's Br. at 12.[76] These contentions, while noted, have also been addressed.

Although Respondent believes, citing *Marks v. United States*, 430 U.S. 188 (1977), ("*Marks*"), that only the plurality's test should be applied, *Marks* says nothing of the sort. Consulting *Marks* itself makes this instantly obvious as the Supreme Court expressed that "[w]hen a fragmented Court decides a case and no single rationale explaining the result enjoys the assent of five Justices, 'the holding of the Court may be viewed as that position taken by those Members who concurred in the judgments on the narrowest grounds . . . ." *Id.* at 193. That language is the undoing of the Respondent's argument because, as explained *supra*, the judgment which Justice Kennedy joined was limited to vacating "the judgments of the Sixth Circuit in both No. 04-1034 [*Rapanos*] and No. 04-1384,[77] and remand[ing] both cases for further proceedings." That, and only that, was the very limited extent to which there was agreement among five Justices.[78]

2. SIGNIFICANT NEXUS; IS THERE A "SIGNIFICANT NEXUS" BETWEEN THE

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[76]Respondent states in this regard that "[n]on-hydric soils were verified by Blake Parker, the soil scientist who wrote the Corps' wetlands delineation manual soils section." This conclusion was derived from "additional probes" which led Parker to conclude that the samples were representative of the surrounding area, citing Tr. at 1115 and CX-74 Appendix C, and showing the precise locations of all fully described soil samples (Appendix D to CX-74), as well as numerous other probes which revealed non-hydric soils, and all Global Positioning Satellite-located for accuracy. These additional probes satisfied Parker that the full samples were representative of the surrounding area rather than merely small inclusions of non-hydric soils. The same samples also did not show wetlands hydrology. R's Br. at 12. As the Court has already elaborated on its view of the deficiencies with Mr. Parker's second visit to the Site, it rejects each of these claims.

[77]The second docket number applies to the other case affected by the Court's judgment, *Carabell et al v. United States Army Corps of Engineers et al.* , 391 F.3d 704 (6th Cir. Mich., 2004)

[78]Certainly Justice Kennedy would not subscribe to the Respondent's misguided reading of *Marks* as it would have expanded his concurrence beyond its terms and turned his concurrence *in the judgment* into a simple concurrence.

WETLANDS IN ISSUE AND TRIBUTARIES ON THE SMITH FARM SITE TO NEARBY TRADITIONALLY NAVIGABLE WATERS?

Applying, in the alternative, Justice Kennedy's test for jurisdiction, EPA maintains that there is such a "significant nexus" because the wetlands and tributaries at the site "perform and deliver hydrologic, water quality and ecological functions that affect the physical, chemical and biological integrity of downstream traditionally navigable waters . . . including flood control, runoff storage, and pollutant trapping." EPA Br. at 34-35.

With regard to the issue of whether a wetland is performing ecological functions, EPA highlights that there is peer-reviewed research which looks to "field indicators" that allow a site investigator to identify whether a wetland is performing certain functions based on the physical characteristics observed in the field. EPA witness Charles Rhodes, who was qualified as an expert in wetlands ecology, was "tasked with determining if ecological functions were being performed on the Smith Farms wetlands and being delivered to the navigable waters." EPA Br. at 35, quoting Rhodes at Remand Tr. 664-69. Rhodes stated that "the undisturbed forested areas of the Smith Farm Site appeared typical of forested wetlands on mineral flats that he has observed in the course of his career, . . . [that these areas] were consistent with descriptions in the literature of forested wetlands on mineral flats [and that in his opinion] the wetlands on the Smith Farm site perform ecological functions that are delivered from the Smith Farm wetlands to traditionally navigable waters, including flood flow storage and flow moderation, denitrification, primary productivity, and habitat." EPA Br. at 36, citing Remand at Tr. 669, 670, 674.(Rhodes). In addition, Mr. Martin, who "has worked in the Virginia coastal plain as a representative of the U.S. Army Corps of Engineers for 16 years . . . [and] "has performed or confirmed hundreds of wetlands delineations and jurisdictional determinations . . . [and whose job includes assessing] "the functions being performed by wetlands," also concluded that the Smith Farm wetlands perform and deliver such ecological functions. EPA Br. at 37. As noted, the Court subscribes to these evaluations.

EPA maintains that the preponderance of the evidence shows that the subject wetlands are performing 'flood storage' and 'flow moderation' functions. These functions, which are also described as 'desynchronization,' affect the flow in traditional navigable waters downstream from the site, since the wetlands operate like a sponge, absorbing and holding water, and then gradually releasing it, thereby "moderating the volume and velocity of flood peaks." EPA Br. at 37.

Martin's view of Smith Farms' wetland function is that it provides "flood storage, storing precipitation in [its] scattered depressions, desynchronizing flood flows, reducing the peaks of any kind of storm-related flows downstream and extending those flows out. [Other functions of this wetland include a] denitrification function, carbon sequestration,[79] . . . transforming carbon

[79]Carbon sequestration, basically holds carbon on-site. This means carbon in the form of woody material, leaf litter, sticks, etc, which, by being held causes them to decompose more slowly. Tr. 500. Eventually it is converted to dissolved carbon. Dissolved carbon is important

from leaf litter, woody debris to eventually dissolved organics that are then exported downstream. [The wetlands at the Site also] provid[e] habitat functions. Tr. 496. The small and large depressions on the Site make the wetland function like a sponge, preventing water from flowing off the Site immediately. Tr. 497. Such surface storage may flatten the peak of the flow leaving the Site on its way to receiving waters. Tr. 498. Martin did not agree that precipitation fed wetlands have little opportunity to influence the quality of ground and surface water, because the exhibit then adds that such wetlands' "interactions with the atmosphere through acid deposition and carbon dioxide exchanges become the dominant group of functions . . . ." Tr. 608. As Rhodes stated, the Site's wetland functions are flood flow reduction and flow moderation.[80] Water purification also occurs at the Site.

Accordingly EPA maintains that "the preponderance of the evidence demonstrates that the wetlands on the Smith Farm Site are performing the function of 'flood storage' and 'flow moderation.'[81] . . . [and its impact is such that] . . . as precipitation falls on the wetlands, the wetlands act like a sponge, absorbing and holding water and then releasing it slowly into receiving waters. . . . . [Thus it] affects receiving waters by moderating the volume and velocity of flood peaks." EPA Br. at 37, citing Remand tr. 675-76 (Rhodes) and Remand tr. 498 (Martin).[82] The storage and flow moderation functions also affect the base flow of receiving waters, and this itself constitutes a significant nexus to traditionally navigable waters downstream. EPA Br. at 38, citing Remand tr. 678-79 (Rhodes) and *Cundiff,* 480 F. Supp. 2d at 945, holding that a wetlands' capacity to store water is a significant nexus to traditionally navigable waters downstream.

EPA points out that the "[f]ield indicators of flood storage and desynchronization include forest structure, a rough surface with hummocky microtopography, and a scattering of small and large depressions holding ponded water. . . . [and that] [t]he forest structure serves to intercept and slow down precipitation, [while] [s]urface roughness holds water and slows down the travel

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because it is "one of the first links in the food chain for [lower] trophic species." Tr. 501. Thus wetlands deliver dissolved carbon to receiving waters.

[80]Rhodes described the "flood flow moderation" as wetlands serving as a sponge that would hold some amount of water before it started to dribble out. Thus the water is held to some degree at the site for some period of time. Tr. 675. As an example of the other extreme, Rhodes noted that a parking lot would not function that way at all, as all of the water immediately exits such a surface. Tr. 676.

[81]The terms "flood storage" and "flow moderation" are also referred to as "desynchronization" Remand tr. 674 (Rhodes)

[82] Construction of ditches that convey flow from wetlands to the receiving waters would have the opposite effect. The ditches would cause faster movement of water off the Site to the receiving water. Remand tr. 639 (Martin).

of water by storing water in low (or "depressional") areas and intercepting overland flow."[83] Many examples of depressional areas holding ponded water were established by EPA through its witnesses and with photographs. The site also had hydric soils, another field indicator, demonstrating that the soils are subjected to saturated conditions over a period of time. EPA Br. at 38, citing Remand tr. 496-97, 638, (Martin); and 676-678, 685-686,(Rhodes). EPA also contends that the "preponderance of the evidence indicates that the wetlands to which Respondent discharged on the Smith Farm Site also perform denitrification,[84] [which is] a type of water purification process. Nitrates at the site are derived from "airborne nitrogen particles that are deposited on the surface through rain or sometimes as dry deposition." EPA Br. at 39-40, citing Remand tr. 681-82 (Rhodes).

By performing denitrification,[85] the wetlands on the Smith Farm Site reduce the amount of nitrogen that otherwise would be transported downstream to the Chesapeake Bay and its tributaries. It is well-established that areas within the Chesapeake Bay watershed, including the area around the Smith Farm Site, receive significant nitrogen through atmospheric deposition. Remand tr. 641 (Martin); Remand tr. 682-83 (Rhodes). It also is well established that "nitrogen

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[83]. EPA cites to the following in support of this: "Remand tr. 419 (Martin). *See, e.g.*, CX 280-283 (May 2007) & Remand tr. 400-405 (Martin) (photograph in southwest quadrant of Smith Farm Site south of southernmost ditch depicting extensive area of shallow ponding); CX 291 (May 2007) & Remand tr. 418-19 (Martin); (photograph near EPA plot point 1 showing small depression filled with water and woody matter representing temporary storage of water); CX 303, 305, 307 (May 2007) & Remand tr. 436 & 438-39 (Martin) (photographs of areas of standing water near EPA Plot Point 4); CX 348 & Remand tr. 479 (Martin) (ponded water in southwest quadrant of Site); CX 357 (May 2007) & Remand tr. 483 (Martin) (ponded water in the northeast quadrant of Site). Complainants' witnesses also measured microtopography at each sample location. CX 310 (May 2007). Complainants' site investigators in 1999 also noted the Site's hummocky microtopography. Tr. I-122 (Lapp); CX 24." EPA Br. at 38-39.

[84]. Rhodes stated that there were field indicators of denitrification at the Site such as mottling in the soils. He explained that bacteria first use nitrates, and then iron bacteria follow. Hence, the presence of mottled soil shows that bacteria are in this second stage, using iron as an energy source.

[85]. EPA takes note that "[d]enitrification occurs when microbes convert nitrates to nitrous oxide or atmospheric nitrogen. In wetlands, this process occurs when microbes in the soil are subjected to reducing, or anaerobic, conditions and a fluctuating water table. In the absence of oxygen, the microbes use other substances, including nitrates, for the process of decomposing carbon, cellulose, leaf litter, etc. In that process, the nitrates are converted to nitrous oxide and/or atmospheric nitrogen, which is then taken up by plants or into the atmosphere. Because the microbes convert the nitrogen in nitrates to atmospheric nitrogen, that nitrogen is not transported downstream to traditionally navigable waters." EPA Br. at 39, citing Remand tr. 499-500 (Martin) and 681 (Rhodes).

is a significant pollutant contributing to impairment of the Chesapeake Bay." EPA Br. at 40, citing Remand tr. 641 (Martin). "[M]ottling [86] of the soils in the Smith Farm wetlands, indicat[es] that the wetlands were performing the denitrification function. EPA Br. at 40, citing Remand tr. 428-30 (Martin); Remand tr. 498 (Martin); Remand tr. 686-87 (Rhodes) and soil samples noting mottles. CX 310 (May 2007).

EPA also maintains that "[t]he preponderance of the evidence also indicates that the wetlands on the Smith Farm Site . . . perform the function of "primary production," which is the conversion of atmospheric carbon dioxide to organic plant matter that is transported by the tributaries to Quaker Neck Creek and Bailey Creek to traditionally navigable waters."[87] EPA Br. at 41, citing Remand tr. 686, 687-90 (Rhodes). In this regard EPA points out that a "field indicator of the transport of organic carbon is when the water is a tannic or tea color [while] another field indicator of the transport of organic carbon is the presence of foam. *Id.* citing Remand tr. 690-91, 693-694 (Rhodes). Both of these indicators were observed at the site by EPA witnesses.[88] As well, the Respondent's water quality expert, Dr. Cahoon, also observed tannic or tea colored water and foam flowing from the wetlands on the Smith Farm Site and attributed those phenomena to the performance of wetland functions. Tr. IV-17, 20, 22, and RX 28, (Oct. 2003).

EPA also takes note that the Corps and EPA's Section 404 permitting regulations take into account "how a particular wetland sites fits into the larger watershed and landscape." EPA Br. at 42. Cumulative impacts are considered in this process, in order to avoid a situation where each particular wetland is evaluated in isolation. The Court observes that this makes sense in light of the purpose of the Clean Water Act. Thus the regulations recognize that "[a]lthough a particular alteration of a wetland may constitute a minor change, the cumulative effect of numerous piecemeal changes can result in a major impairment of wetland resources." EPA Br. at 43, citing 33 C.F.R. § 320.4. As applied to this Site, consideration of cumulative impacts takes into account that the wetlands "both individually and collectively contribute to the physical,

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[86]EPA notes that a mottle "is a contrasting spot of color, and in the case of denitrification, the contrast is usually a brighter, notably more orange or red color than the surrounding gray soil matrix. Martin's 1999 soil samples also had mottling. *See* Remand tr. 411, 498 (Martin) and CX 26 at EPA 0317 & 0319 (Oct. 2003); CX 28 at EPA 356 & 358 (Oct. 2003).

[87]EPA states that "[o]rganic carbon is one of the lower rungs on the food chain and is used by lower trophic aquatic organisms which, in turn, are a food source for higher trophic organisms further downstream . . . [and by this process] support the ecologic integrity of downstream traditionally navigable waters." EPA Br. at 41.

[88]In this regard EPA cites to "CX 278 (May 2007) & Remand tr. 397-98 (Martin) (photograph depicting foam in water flowing from the juncture of drainages 6 and 7 at Smith Farm Site); CX 355 (May 2007) & Remand tr. 481 (Martin) (tributary to Bailey Creek on Site conveying tea colored water); CX 356 (May 2007) & Remand tr. 482 (Martin) (water in the portion of drainage 6 on the east side of the Site that flows east toward Bailey Creek was tea colored); Remand tr. 690-91 (Rhodes); Remand tr. 726 (Rhodes)." EPA Br. at 41- 42.

chemical and biological integrity of traditionally navigable waters." Mr. Rhodes testified that each wetland contributes to the ecology and the well being of the downstream receiving waters, which in this case are the Nansemond and the Western Branch of the Elizabeth.[89]

> EPA and the Corps identified a relatively undisturbed and nearby reference wetland[90] in connection with its effort to evaluate the functions performed by the Smith Farm wetland prior to the disturbance caused by Respondent's activities in 1998 and 1999. It maintains this is an established methodology, known as the hydrogeomorphic or "HGM" approach. EPA Br. at 44, citing Remand tr. 440-41 (Martin) and Remand tr. 671-72 (Rhodes). Using the described protocol, Complainants' investigators concluded that the Shoulder's Hill Site "was similar[91] to the Smith Farm Site in terms of

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[89]Highlighting the cumulative effect that must be considered in protecting the water ecosystem, Rhodes made an analogy to a pier's pilings, "It's almost like each one is a piling on a pier and if you remove one piling, the pier might stand, but the integrity is compromised. And if you keep removing piling after piling, eventually the pier is going to collapse. By the same token, I've taken training in the use of cumulative environmental impacts and basically what we have here is each individual wetland contributes in total to the overall health of the ecology of the downstream receiving waters." EPA Br. at 44, citing Remand tr. 708 (Rhodes).

[90]Using geographic information system ("GIS") tools and the National Wetlands Inventory ("NWI"), "Complainants determined that the reference wetland should be in the same or similar landscape position as the Smith Farm Site and should be part of the same watersheds (i.e., the Nansemond River and/or Western Branch of the Elizabeth River)." EPA Br. at 44. "GIS" refers to Geographic Information System software, which allows one to organize and overlay geospatial data .... allowing one to manipulate spaces and get distances. Tr. 114 May 14, 2007. It allows one to create a shape and move it map to map. "Complainants also determined that the reference wetland should have the same water regime and vegetative cover as the Smith Farm Site. Remand tr. 91-92 (Stokely). Since the Smith Farm Site actually includes three different water regimes, the search was limited to wetlands on the peninsula between the Nansemond and Western Branch of the Elizabeth Rivers with the following water regimes as classified by the National Wetlands Inventory. Remand tr. 91-92 (Stokely). This search identified the wetland tracts identified at CX 309, Figures 2 & 5 (May 2007); Remand tr. 97-98. The Shoulders Hill Site was selected because it met the search criteria and Complainants were able to obtain access to it. Remand tr. 96-97 (Stokely)" EPA Br. at 45. "Complainants' site investigation team also drove to a number of locations to which Complainants did not have access and viewed those locations from the road to determine at least whether vegetative cover confirmed the GIS mapping exercise." Remand tr. 100-01 (Stokely).

[91]As cited by EPA the similarities were as follows: "Like the Smith Farm Site, the Shoulder's Hill Site sits on a drainage divide and water on the Shoulder's Hill Site flows through intermittent tributaries (albeit different first order tributaries than the Smith Farm Site) to both the Nansemond River and the Western Branch of the Elizabeth River. Remand tr. 442-44

hydrogeomorphic class, water regime, and plant communities. . . . [and that] the Shoulders Hill Site was performing and contributing to the Nansemond River and Western Branch of the Elizabeth River the same types of functions as the Smith Farm Site. Remand tr. 752 (Rhodes)." EPA Br. at 45- 46.

On the basis of the foregoing, Complainants' assert that the preponderance of the evidence demonstrates the wetlands on the Smith Farm Site have a significant nexus to downstream traditionally navigable waters because they are performing and delivering the very functions described by Justice Kennedy as contributing to the physical, chemical and biological integrity of those waters. . . . [and that] [a]s such, the Smith Farm wetlands clearly satisfy the "significant nexus" test described in Justice Kennedy's concurring opinion in *Rapanos*. EPA Br. at 46.

For its part, Respondent asserts that "[s]imply because the wetlands may be doing something does not mean they are significant or every other wetland in the United States would also be significant." R's Br. at 5. In its view, "EPA simply failed to prove that there was anything unique or significant about any wetlands on the Property [and that] [i]nstead, it relied on speculative and non-measured harms, . . . [that the] ditching 'could cause erosion,' [and that the] wetlands 'may help desynchronization' [and that] 'denitrification may be occurring'[but that such speculative evidence is] insufficient to support jurisdiction."

Respondent also contends that "[t]he EPA failed to establish any significant functions supporting any wetlands on the Property having significant nexus to navigable waters." R's Br. at 28. Respondent maintains that "[o]nce the Court determines the extent and location of wetlands and any connectivity, [it must then assess the functions of any wetlands to determine if they] bear a sufficient relationship to navigable waters such that CWA jurisdiction should be found."[92] R's Br. at 28. On this point, Respondent advances

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(Martin); Remand tr. 104-06 (Stokely); CX 209, Figure 4 (May 2007). Complainants' field investigation confirmed that the Shoulder's Hill Site Remand tr. 670 (Rhodes) (Shoulders Hill, like Smith Farm, was consistent with other mineral flat hardwood wetlands that Mr. Rhodes has observed); Remand tr. 772-76 (Rhodes) (plant communities were similar); Remand tr. 450-51 (Martin) (plant communities were similar); Remand tr. 100 (Stokely). Complainants' observed the same types of field indicators at the Shoulders Hill Site as were identified at the Smith Farm Site. *See* Remand tr. 452 (Martin); CX 170 & 174 (May 2007) & Remand tr. 452-54 (Martin) (photographs of depressional water storage and blackened leaves at Shoulder Hill Site); CX 311 (describing mottles at various soil depths)**.**" EPA Br. at 45.

[92]Confusing the proper analysis, Respondent begins this argument by asserting that "[b]oth EPA and Respondent agreed that the areas that would be considered wetlands look the same as non-wetlands areas on Site." From this irrelevant point, Respondent asserts that "[b]ecause the landscape is so similar between uplands and wetlands, the functioning of the landscape is the same for both uplands and wetlands." From there, Respondent moves to the value the localities and the federal government has ascribed to wetlands such as those at Smith

four contentions: "EPA did not establish that the wetlands provide habitat important to navigable waters," nor "that the wetlands provide flood storage critical to navigable waters," nor "that the wetlands provide denitrification significant to navigable waters," nor "that these wetlands contribute carbon in a significant way to navigable waters." R's Br. at 30- 39.

The essence of these contentions are noted, briefly, here. On the habitat issue, Respondent asserts that "[e]vidence establishing any linkage between any habitat for animals at the Property and navigable waters was simply not presented." On the flood storage issue, Respondent disputes EPA's claim that the wetlands "have a significant nexus to navigable waters because they "desynchronize" water flow or store water." Respondeent characterizes EPA's evidence on this claim as "speculative or insubstantial, [and as such] they fall outside the zone fairly encompassed by the statutory term 'navigable waters.'" R's Br. at 32. The hummocky areas EPA cited are not unique to the Site and in upland areas their function is the same. Although EPA claimed that, as a result of the ditching, water would flow faster and therefore could cause erosion, Respondent's experts found little evidence of that occurring. In any event, Respondent maintains that any flood storage issues are beside the point because this case is really about the spreading of wood chips, not the ditching activity. R's Br. at 34.

Respondent also contends that "EPA did not establish that the wetlands provide denitrification significant to navigable waters." While Respondent concedes that wetlands can remove nitrates from water, that can occur in non-wetlands or in open water as well. As EPA took no measurements on this, they cannot speak authoritatively on "either the amount of nitrates at the Property or the Property's ability to process [n]itrates." R's Br. at 35.

Alternatively, Respondent maintains that even applying Justice Kennedy's significant nexus test, EPA failed in its burden under that test. Thus "Respondent contends that the evidence in this case proved that any wetlands on the Property have, at best, an insubstantial nexus between the Property and navigable waters." R's Br. at 14.

In determining whether the wetlands have a "significant nexus," Respondent maintains that "it is important to determine the location and quantity of any wetlands at the Property and their precise relationship to navigable waters." R's Br. at 14.

Farm. For the localities, Respondent notes, the property has been zoned to allow future development, while the federal government has concluded that land immediately adjacent to the Great Dismal Swamp can be developed without having a significant impact on natural resources. Because the Smith Site is also near the same Swamp, Respondent concludes that the Site's value must also be small. Respondent, acknowledging that "this is certainly not determinative of CWA jurisdiction" adds "it is evidence that should be considered." The Court only agrees with the first part of Respondent's observation that it "is this is certainly not determinative of CWA jurisdiction."

Respondent asserts that this includes knowing "how much wetland was there" and its quality, contending that it is difficult to identify a significant nexus where a wetland is "so small that it becomes insignificant on the landscape. R's Br. at 15. Yet, Respondent asserts, EPA has never determined this basic and critical information about the wetlands in issue and consequently failed to accurately determine the location and quantity of the wetlands at the site. In support of this claim, Respondent states that EPA has never done a wetlands delineation of the property, and did not take a sufficient number of sample points. Nor were these deficiencies in adequately identifying the property compensated by the "NWI maps and aerial photography interpretation by Peter Stokely" because, as Stokley conceded, the "NWI is inaccurate on a small scale and 'may overestimate or underestimate the amount of wetlands depending upon the landscape conditions.'"[93] R's Br. at 15. Essentially, Respondent maintains that Sample Point B, being inadequate, did not provide a reliable basis for EPA to conclude that "a large portion of the Property was wet and jurisdictional." R's Br. at 16. The Court would simply observe that EPA's case consists of far more than simply Sample Point B, and that the Sample Point had a corroborative effect to the other evidence of record.

Regarding the ecological functions at Smith Farms, Pierce did a qualitative assessment and concluded that the wetland and nonwetland functions had very little ecological function differences. Tr. 1445. Addressing woody debris, there was an obvious attempt to indirectly speak to the woody debris in the form of the wood chips that the Respondent put down. Tr. 1447. Pierce believed that for all such woody debris, both for that naturally occurring and for that debris deposited by the Respondent, none of it was going anywhere. As to the wetlands' effect in minimizing flooding impacts, his view was that wetlands don't do any more regarding flooding minimization than do nonwetlands at the Site. Tr. 1449. Further, Pierce contended that most of the soils on the Site have a "relatively large sand content to them" and as such most rain would "infiltrate into the ground" and not run off it as flow. Tr. 1450.

Respondent also claims that the wetland functions at the Site "were no more than

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[93]Stokley, Respondent asserts, took the NWI map "as gospel" and his use of Sample Point "B" was a misguided basis to conclude that the "entire area identified as wetlands was wet." since water was not found until 17 inches below the soil, meaning that the sample did not meet the hydrology parameter. Respondent relates a host of other perceived deficiencies in Stokley's analysis that undercut his conclusions. These include failing to approximate the site's actual boundaries, misdrawing the property lines so that they appeared closer to water features on maps and aerial photos than they were, and including large portions of land adjacent to the Site, all with the effect of making it seem that there was a continuous surface connection with navigable waters from the Site's western outfall. R's Br. at 17. In addition, Respondent maintains that Stokleys' errors had the effect of overstating the Site's "proportion of the watershed" when it actually represents "only .11% of the Chesapeake Bay watershed." R's Br. at 18.

minimal and insignificant." R's Reply at 1. Here again, the Court finds that the preponderance of credible evidence leads to a contrary conclusion and therefore rejects this claim as well. It is also worth remembering, as EPA noted, that the regulations take into account "how a particular wetland sites fits into the larger watershed and landscape," and that cumulative impacts are considered in this process, in order to avoid a situation where each particular wetland is evaluated in isolation. As discussed earlier, the regulations recognize that "[a]lthough a particular alteration of a wetland may constitute a minor change, the cumulative effect of numerous piecemeal changes can result in a major impairment of wetland resources." EPA Br. at 42- 43.

Although the Court agrees with the Respondent's contention that the "scope of the remand is broad, encompassing the evidence offered by Respondent,"[94] the more fundamental problem is that, for the reasons set forth in this Decision Upon Remand is that the Court has found that the evidence does not support the Respondent's contentions. Obviously the Respondent has a different take on the evidence than the Respondent. However, the Court has not concluded that the wetlands are isolated, nor that the water flowed "intermittently," even if the plurality's view of that degree of frequency is applied. Further, the Court does not subscribe to the idea that because water happens to flow through drainages before eventually reaching navigable-in-fact waters, that somehow destroys jurisdiction under the Clean Water Act. First, even the four justices who spoke substantively to the issue of jurisdiction, (and remembering again that Justice Kennedy did not join those four justices substantively), did not speak in terms of excluding such man-made drainages. Second, as the record amply demonstrates, many of drainages have been present for many decades. Third, one should not be lulled into thinking that, absent such man-made drainage intervention, water exiting the Site would not over time find its own gravity directed courses of exit along the Site's topographical divide and that eventually natural courses would reemerge.

Respondent asserts that Judge Charneski's Initial Decision equated adjacency with significant nexus but that in light of *Rapanos* the jurisdictional analysis is more complex. In this regard, Respondent concedes that there is an "admitted hydrologic connection" but that it is "remote and intermittent." Respondent's Reply at 5. Without characterizing Judge Charneski's analysis of significant nexus, certainly this Court's obligation is to apply the facts, as found at the initial hearing and as augmented at the remand hearing and then compare them to the different views expressed by the Supreme Court in *Rapanos.* The Court has done so.[95]

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[94]Respondent's Reply at 2. (emphasis omitted).

[95]Applying the facts in light of the varying views expressed in *Rapanos* does not mean that the Court accepts Respondent's interpretation of that case, nor other contentions of the Respondent such as its view that the "precise property bounds [are now] critical. In the Court's

Conclusion

Upon review of the entire record,[96] the Court finds that the preponderance of the evidence establishes the forested portion of Smith Farm is composed primarily of wetlands,[97] that those wetlands perform significant functions, and that those wetlands are not isolated but rather they are connected to and exit from the Smith Farm Site via various drainages. Those drainages on the Site contain flow during all quarters of the year, except in periods of extended drought. Flows from the drainages connect with the various creeks or tributaries to creeks, as found at the initial hearing, and as re-established at the hearing upon remand, and in an unbroken fashion, those flows connect with other creeks, streams and ultimately with navigable-in-fact rivers. The historical aerial photographs of the Site by themselves establish the longstanding nature of the flows leaving the Site. The NWI inventory mapping establishes that the forested portions of the Site are predominantly wetlands and this conclusion was ground-truthed by the many visits made by government experts over many years. Even putting aside the whole comparable wetland analysis from the Shoulder Hill Preserve Site, the analysis at the Site itself, including Sample Point B, established that the forested area of the Site was overwhelmingly wetlands. In addition to the testimony from these many government witnesses, which the Court, upon careful scrutiny, found to be highly credible, the wealth of photographs in the record, the representative samples of hydric soil, together with a predominance of wetland vegetation, and the established wetlands hydrology, also established that the forested portion of the Site is predominantly wetlands.

In terms of the most significant issue for the remand, it is first noted that Judge

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view the property bounds contention is a canard. The elaborate testimony about *exactly* where a course traveled and whether a given map *precisely* reflects such courses was an attempt to create complexity where it does not exist. The water certainly leaves the Site along the ditches, as identified at both proceedings by witnesses. Similarly, Respondent's contention that *post-disturbance* conditions should be considered in determining whether there is CWA jurisdiction is far off the mark. Respondent claims that Justice Kennedy "considers the impact fill could have on the functioning of a wetland as related to navigable waters" if it is shown that there was only "speculative or theoretical assertions of harm." Respondent's Reply at 6. Placing unpermitted fill in jurisdictional wetlands constitutes harm by that act itself.

[96]The Court carefully read all post-hearing briefs. The omission of discussion for every jot and tittle raised by the parties simply means that the Court determined that such items were unnecessary to the resolution of the issues upon remand.

[97]As the Respondent does not claim that the Site is devoid of wetlands, nor that it is, as a whole, a drained site, the question becomes the extent of the wetlands at the Site and their connection to receiving waters. R's Br. at 27.

Charneski had already found that is was "undisputed that the wetlands involved in this case are adjacent and contiguous to water bodies which flow from Smith Farm." Tr. 24-30, 134-135 (Vol. II), 116-117 (Vol. V). He also found that there was "a 'significant' hydrological connection between the waters adjacent to the Smith Farm wetlands and navigable waters," leading him to conclude that the Site's wetlands were jurisdictional wetlands. *See supra* at pages 5-6 of this Decision Upon Remand, recounting Judge Charneski's description of the hydrological connection. Stokley's testimony at the remand proceeding concerning the flow through the Site's drainages was adopted by this Court as a finding of fact. *See supra* at page 19. Martin's testimony strongly confirms, yet again, the accuracy of this determination. *See supra* at page 20- 22. Martin, it will be recalled, walked many of the drainages, and documented flow on many occasions of his visits. The Court considered Mr. Martin to have been a reliable and highly credible witness. Even his January 2007 visit to the Site, conducted some eight years after the improperly implemented Tulloch ditches had been dug, established that the forested portion of the Site continues to be wetlands. *Id.* So too, during his April 2007 visit to the Site, Martin confirmed connections between wetland areas on the property and drainages extending off the site, through the western end of the property on the Suffolk side, and through the eastern end of the property on the Chesapeake side, by his personal observation of the flow and by walking large sections of the drainages downstream including, in some instances, by walking all the way to the tidal limits. *Id.*

EPA witness Charles Rhodes, another expert in wetlands ecology, who visited the Site twice in 2007, concluded that ecological functions were being performed on the Site's wetlands and were being delivered to navigable waters. Those functions include providing short-term water storage areas, hydric soils which act as 'shock absorbers' to slow the exit of water from the Site, and denitrification. *See supra* at page 23. It is important to appreciate that the Corps, as part of an intelligent analysis of any wetland disruption, considers cumulative effects, not simply the individual impact of a particular wetland disruption on the environment. Tr. 503. For example, it considers the impact on watershed level generally. As expressed by Rhodes, the functions performed at the Site are similar to the functions performed by other similar wetlands in the peninsula. Tr. 706-708. He noted that "[t]here are two ultimate receiving water bodies, the Nansemond and the Western Branch of the Elizabeth. Each wetland track contributes to the ecology and the well being of the downstream receiving waters. It's almost like each one is a piling on a pier and if you remove one piling, the pier might [remain] stand[ing], but the integrity is compromised. And if you keep removing piling after piling, eventually the pier is going to collapse. . . . [thus] each individual wetland contributes in total to the overall health of the ecology of the downstream receiving waters." Tr. 708. The Court agrees with this view; the role of qualifying wetlands must not be evaluated myopically.

EPA witness Dr. Dennis Whigham was another particularly credible expert witness for EPA. He made an personal assessment at the Site, in April 2007, for the purpose of evaluating the Site's characteristics as well as its connectivity to other waters.

During his visit he observed indicia of the Site's functions, recording tannin colored water, foaming, shallow rooted trees, and hydric soils,(even where adjacent to ditches), as well as the flow on and from the Site itself. With regard to the flow, Dr. Whigham stated that he observed water flowing in every ditch that was connected to the main ditch. Although he noted finding a few spots that were uplands, these were minor and exceptions to vast majority of the Site's overall wetland character. *See supra* at page 31-34. The Court agrees with Dr. Whigham's highly credible expert conclusion that the Smith Farm Site is not an isolated wetland.

Nor did the evidence offered by the Respondent upon remand shake these determinations. To begin, the Court agrees that Respondent's first set of experts, presented at the initial hearing before Judge Charneski, established that the forested portion of the Site are predominantly wetlands. Although Respondent's new set of experts attempted to rebut the opinions of its first set of experts, the Court did not find these new views to be credible. The basis for this conclusion has already been discussed in detail in this decision. The wetlands at the Site are decidedly *not* isolated wetlands, as Respondent contends. Beyond that, as noted at the outset of this decision, Mr. Boyd's testimony at the first hearing, by itself, establishes that the forested portion of the Site was wetland. Initial Decision at 3 - 4. People do not go to the trouble of performing extensive unnecessary actions, such as the occurred here with the Respondent's attempt to create Tulloch ditches at the Site. Nor did Mr. Boyd explain away his earlier admission about the nature of the forested wetlands when offering his testimony at the proceeding upon remand. As noted, his claim that he did not recall whether Mr. Needham told him there were wetlands in the forested part of the Site was not credible at all.

Thus, under the perspective expressed by Justice Scalia, on behalf of himself and three other Justices, the Site does have relatively permanent standing or flowing bodies of water which flow more than occasionally and more than intermittently. Further, the forested wetlands at the Site are of the type where it is difficult to determine where the water ends and the wetlands begin, which also places them within the Justice Scalia group. Applying the view of the reach of the Clean Water Act's jurisdiction expressed by Justice Kennedy, the Site qualifies *a fortiori*, providing a "significant nexus" as there is a close connection between the forested wetlands and navigable waters, and because those wetlands perform filtering, flood control and runoff storage functions which impact the integrity of connected waters. Habitat benefits are also provided by the wetlands.[98]

Accordingly, the Court reimposes the penalty imposed by Judge Charneski except

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[98]The Court also considered and applied the EPA interpretational document entitled: *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*, issued June 5, 2007.

that, in fairness, because it was the government's responsibility to provide a competent court reporter for these proceedings and because it failed to do so, causing the initial hearing before Judge Charneski to be repeated before him a second time, the penalty is reduced by $10,000.00. This reduction is appropriate upon consideration of the "other matters as justice may require" criterion. This amount is an approximation of the unfair cost imposed upon the Respondent by virtue of having to completely present its defense before Judge Charneski again, through no fault of its own. The Court is willing to allow a further reduction in the penalty, upon Respondent's Counsel documenting that the costs associated with the flawed first hearing were higher than $10,000.00.[99]

ORDER

Judge Charneski's Initial Decision holding "that Smith Farm Enterprises, L.L.C., violated Section 301(a) of the Clean Water Act, *33 U.S.C. § 1311*(a), as alleged in Count I, by discharging fill material into "waters of the United States," without having obtained a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the Act. *33 U.S.C. § 1344.* It is further held that respondent violated Section 301(a) of the Clean Water Act, as alleged in Count II, by discharging pollutants associated with storm water, without having obtained a National Pollutant Discharge Elimination permit pursuant to Section 402 of the Act. *33 U.S.C. § 1342*," is adopted for this Decision Upon Remand.

The Court also adopts Judge Charneski's determination for the penalties assessed, less the $10,000.00 reduction. Thus, it adopts "[f]or the Section 301(a) violation involving the Section 404 permit, [by] Smith Farm Enterprises, L.L.C., [the assessment of] a civil penalty of $ 80,000, [and for] the Section 301(a) violation involving the Section 402 permit, [the] [R]espondent is assessed a civil penalty of $ 14,000. *33 U.S.C. § 1319*(g)." Accordingly, upon application of the reduction, Respondent is directed to pay a total civil penalty of $84,000.00 within 60 days of the date of this order.

Payment is to be made by certified or cashier's check, payable to "U.S. Environmental Protection Agency, Fines and Penalties, Cincinnati Finance Center, P.O. Box 979077, St. Louis, MO 63197-9000." Unless an appeal is taken to the Environmental Appeals Board pursuant to 40 C.F.R. § 22.30, this decision shall become a Final Order as provided in 40 C.F.R. § 22.27(c).

[99]The Court wishes to add that it has high regard for the professionalism and skill displayed by both Counsel for the Respondent in the proceeding upon remand. The same assessment is made for Counsel for EPA. While Respondent's Counsel did an admirable job for their client, the facts and the law simply did not support their position.

William B. Moran
United States Administrative Law Judge

Washington, D.C.
March 7, 2008

Appendix

As noted in the body of this Decision Upon Remand, the Court adopts as findings of fact the additional details of the established wetlands-to-navigable waters connection, as set forth in EPA's post-hearing brief, which follows:

Demonstrating the connectivity between the Site's wetlands and navigable waters, EPA notes that "Respondent's expert, Mr. Wolfe, testified that the waterbodies flowing away from the Smith Farm Site (drainages 1-7) flow to downstream navigable-in-fact waters." EPA Br. at 27, citing Tr. V-11-12 (Wolfe). EPA also points to the testimony of the Corps of Engineers' Mr. Martin, who stated that "[d]rainages 6 and 7 are connected to traditionally navigable waters because drainage 7 flows into drainage 6 (CX 279 (May 2007) (juncture of drainages 6 and 7) and they then collectively flow to a pond, which then discharges to a stream that flows through a culvert under Shoulder's Hill Road at the northwest portion of the property, and form a tributary to Quaker Neck Creek (hereafter "drainage 6/7 tributary to Quaker Neck Creek").[100] Tr. 464 (Martin); CX 308 (May 2007); CX 328 (May 2007)." EPA Br. at 28. In this regard, EPA highlights the fact that "Martin has walked along the drainage 6/7 tributary to Quaker Neck Creek from a point less than one hundred yards from where it it departs the Smith Farm Site and followed its flow to the tidal portion of Quaker Neck Creek [and he also] photographed this tributary at various points, and he observed the presence of an ordinary high water mark from the point where

[100]EPA also notes that: "Dr. Cahoon, one of Respondents' expert witnesses, photographed water flowing through a 'stream' (Dr. Cahoon's term) off the Site to tributaries to Quaker Neck Creek and Bailey Creek." RX 28 (Oct. 2003); 29 (Oct. 2003)." EPA Br. at 28.

the stream flows out of the pond on the Smith Farm Site to the point in which it flows to the tidal portion of Quaker Neck Creek.[101] Tr. II-48-53, 56-58 (Martin); CX 102I, 102J, 102K, 102L, 102M, 102N, 102W, 102X, 102BB (Oct. 2003); *see also* Remand tr. 515-16 (Martin)." EPA Br. at 28.

Continuing with its review of the evidence establishing the wetland-to-navigable waters connectivity, EPA observes that "[a]fter the drainage 6/7 tributary to Quaker Neck Creek flows approximately 2600 feet from the Smith Farm Site, it joins with other tributaries to form Quaker Neck Creek. At that location (approximately 2600 feet or one-half a mile from the Smith Farm Site), Quaker Neck Creek is influenced by tides. Tr. II-30-31 (Martin); CX 56; CX 102Y, 102Z, 102AA. Quaker Neck Creek flows to Bennett's Creek, which then flows to the Nansemond River, which in turn flows to the James River and the Chesapeake Bay. Tr. II-24-26 (Martin). Accordingly, Quaker Neck Creek is a tributary to Bennett's Creek, the Nansemond River, and the Chesapeake Bay. The Corps maintains navigation channels in the Nansemond River. Tr. II-24 (Martin). It is undisputed that the Chesapeake Bay, the James River, the Nansemond River, Bennett's Creek and the tidal portions of Quaker Neck Creek are traditionally navigable waters. Tr. V-78-79 (Wolfe)." EPA Br. at 29.

EPA also takes note that, "[c]onsistent with the witnesses' testimony, drainages 6 and 7 are depicted as geographic features on the United States Geologic Service's ("USGS") topographic map dated 1994. CX 87, Figure 2 (Oct. 2003); Remand tr. 318-19 (Martin). Drainages 6 and 7 on the Smith Farm Site are depicted as broken blue lines, which indicate intermittently flowing streams. CX 87, Figure 2 (Oct. 2003); Remand tr. 67 (Stokely). The drainage 6/7 tributary to Quaker Neck Creek is depicted as a broken blue line near the Smith Farm Site and then as a solid blue line (indicating perennial flow) approximately 2600 feet west (downstream) of the Smith Farm Site. For purposes of UGSG mapping, "intermittent" streams are streams that flow part of the year." Remand tr. 67 (Stokely). The configuration of waterbodies, including drainages 6 and 7, conveying flow from the western portion of the Smith Farm Site has been depicted on historic USGS maps since at least 1965 and is visible on aerial photographs dating back to 1963. CX 125, Figures 7-8 (May 2007); Remand tr. 76- 81 (Stokely). Drainage 6 is visible on the 1955 USGS topographic map and on aerial photographs dating back to 1949. CX 125, Figures 4-6 (May 2007); Remand tr. 81-87 (Stokely). A portion of drainage 6 flowing west from the Smith Farm Site under a railroad track (that still exists today) to the drainage 6/7 tributary to Quaker Neck Creek is visible in an aerial photograph from 1937 (CX 125, Figure 3 (May 2007)) and depicted on a USGS map derived from surveys published in 1920 (CX 125, Figure 2 (May 2007)). Remand tr. 87-90. Respondents agree that the "channel alignment that exists as of 2007 (absent the sediment retention pond) is the same as was excavated prior to April 9, 1949." RX 74 at page 46 (May 2007)." EPA Br. at 29-30.

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[101] ALJ Charneski specifically credited Mr. Martin's testimony as to the presence of an ordinary high water mark. Initial decision at 29.

EPA also contends that "Drainages 1, 2, 3, 4 and 5 contribute flow to and are tributaries to Bailey Creek. Drainages 1-5 are depicted on the 1994 USGS topographic map as broken blue lines (indicating intermittent flow) on and near the Smith Farm Site. CX 87, Figure 20 (Oct. 2003). Approximately 4,200 feet from the Smith Farm Site, drainages 1-5 join with other tributaries to form Bailey Creek. Id. Mr. Martin photographed these drainages at various points and observed the presence of an ordinary high water mark to the point where Bailey Creek becomes influenced by tides. Tr. II-40-48, 53-56 (Martin); CX 102A, 102B, 102C, 102D, 102E, 102F, 102G, 102H, 102P, 102Q, 102R, 102S (Oct. 2003).

Bailey Creek is influenced by tides at its formation, where drainages 1-5 join with other tributaries, approximately 4,200 feet downstream from the Smith Farm Site. Tr. II-32 (Martin); CX 56; CX 102o. Bailey Creek flows to the Western Branch of the Elizabeth River, which in turn flows into the James River and the Chesapeake Bay. The Corps has issued permits for docks or marinas on portions of Bailey Creek and maintains a navigation channel in the Western Branch of the Elizabeth River. Tr. II-25 (Martin). It is undisputed that the Chesapeake Bay, the James River, the Western Branch of the Elizabeth River and the tidal portions of Bailey Creek are navigable waters. Tr. V-82-83 (Wolfe).

The configuration of waterbodies, including drainages 1,2, 3, 4, 5, and the eastern portion of drainage 6, conveying flow east from the eastern portion of the Smith Farm Site has been depicted on historic USGS maps since at least 1965 and is visible on aerial photographs dating back to 1963. CX 125, Figures 7-8 (May 2007); Remand tr. 76- 81 (Stokely). Drainges 3, 4 and 5 are depicted on the 1955 USGS map. CX 125, Figures 5-6; Remand tr. 83-84 (Stokely). Although not depicted on the 1955 map, drainage 1 is visible on a 1953 aerial photograph. CX 125. Figure 5 (May 2007); Remand tr. 85 (Stokely). Drainages 1, 2 and 4 are visible in a 1937 aerial photograph, and Drainage 5 appears on the 1920 USGS topographic map. CX 125, Figures 2-3 (May 2007); Remand tr. 89-91 (Stokely)." EPA Br. at 30-31.

In the matter of Smith Farm Enterprises, LLC
Docket No. CWA-03-2001-0022

CERTIFICATE OF SERVICE

I certify that a true copy of **Decision Upon Remand,** dated March 7, 2008 was sent this day in the following manner to the addressees listed below:

Original and one Copy by mail to:

Lydia Guy
Regional Hearing Clerk- Region 3
U.S. EPA
1650 Arch Street
Philadelphia, PA 19103

Copy by Regular Mail and faxed to:

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Assistant Regional Counsel- Region 3
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_____

Knolyn R. Jones
Legal Staff Assistant

Dated: March 7, 2008