

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION OF NAVIGATOR HEARTLAND
GREENWAY, LLC FOR A PERMIT UNDER THE SOUTH DAKOTA ENERGY
CONVERSION AND TRANSMISSION FACILITIES ACT TO CONSTRUCT THE
HEARTLAND GREENWAY PIPELINE IN SOUTH DAKOTA**

DOCKET NO. HP22-002

**Direct Testimony of Brian Sterner
On Behalf of the Staff of the South Dakota Public Utilities Commission
May 25, 2023**



1 **Q: Please state your name and business address.**

2

3 A: Brian Sterner, 2009 Mackenzie Way, Suite 100, Cranberry Township,
4 Pennsylvania 16066

5

6 **Q: Describe your educational background.**

7

8 A: I have a Bachelor of Science in Biology from Grove City College. I also have
9 professional trainings in wetland delineation, wetland mitigation, workplace safety
10 and environmental impact studies.

11

12 **Q: By whom are you now employed?**

13

14 A: I have been employed by Environmental Resources Management, Inc. since
15 November 2011.

16

17 **Q: What work experience have you had that is relevant to your involvement on
18 this project?**

19

20 A: I have 33 years of experience as a biologist responsible for permitting and
21 compliance under state and federal wetland and water quality laws and policy. I
22 have extensive experience preparing National Environmental Policy Act (NEPA)
23 environmental studies and documentation including Categorical Exclusions,
24 Environmental Assessments, and Environmental Impact Statements. As an
25 environmental consultant, I have been responsible for project compliance under
26 the federal Clean Water Act requirements for waterbodies, the National Pollutant
27 Discharge Elimination System (NPDES), and related studies and analyses for
28 water quality of surface waters and groundwater. I have also conducted studies
29 under the Migratory Bird Treaty Act (MBTA), including recent preparation of a Bald
30 Eagle and Osprey Management Plan. I have training and experience in freshwater
31 mussel identification and aquatic ecology, and I have also conducted numerous
32 field studies for threatened and endangered species, including several species of
33 bats and numerous species of vegetation. I am recognized as a Qualified Botanist
34 by the Pennsylvania Department of Conservation & Natural Resources
35 (PACDNR). I have extensive experience in remote land use reconnaissance and
36 aerial interpretations, particularly as it relates to wetlands and forest ecosystems.
37 I also have formal training by the Federal Energy Regulatory Commission for
38 environmental review and compliance. I have applied my experience throughout
39 the United States, working on transportation, energy production and pipeline
40 networks, remediation, and other infrastructure projects.

41

42 **Q: What Professional Credentials do you hold?**

43

44 A: Professional Wetland Scientist (PWS) through the Society of Wetland Scientists,
45
46 Qualified Botanist by the PADCNR,

47
48 Certified Pesticide/Herbicide Applicator by the PADCNR (for the purpose of
49 invasive species control on mitigation projects).
50

51 **Q: What is the purpose of your testimony?**
52

53 A: To provide an assessment of the completeness and adequacy of the Hydrology
54 section (6.4) and Water Quality section (6.10) of the Application. My testimony
55 contains my professional opinion based on experience, review and comparison of
56 other water-related sections of the Application, and includes statements and
57 recommendations regarding additional review, assessments and supplemental
58 information that Navigator Heartland Greenway Pipeline System may conduct and
59 include in the Application so that the impact analysis may be considered complete.
60

61 To provide an assessment of the completeness and adequacy of Section 6.5 -
62 Terrestrial Wildlife and Ecosystems of the Application. My testimony contains my
63 professional opinion based on experience, review, and comparison of other land-,
64 soil-, and ecosystems-related sections of the Application, and includes statements
65 and recommendations regarding additional review, assessments, and
66 supplemental information that Navigator Heartland Greenway Pipeline System
67 may conduct and include in the Application so that the impact analysis may be
68 considered complete.
69

70 **Q: What methodology did you employ for your hydrologic and water quality
71 review?**
72

73 A: The methodology that I employed to review and assess Section 1.8 - Other
74 Required Permits, I referenced my long-term experience in federal and state
75 regulatory requirements as it relates to wetland and waterbody permitting, as well
76 as water quality related assessments and required permitting. The required federal
77 and state permits are discussed in more detail below, but they are identified in
78 Table 1.8-1 – Anticipated Permits for South Dakota Segment of the Heartland
79 Greenway Pipeline System of the Application.
80

81 The methodology that I employed to review and assess Section 6.4.1 - Drainage
82 Patterns, was first based on a full review of all water-related sections of the
83 Application, including soils and geology. I also referenced my extensive wetland
84 delineation and mitigation experience and understanding of groundwater and
85 drainage patterns. I also utilized my experience in the permitting and construction
86 oversight of large and small pipeline projects that involved a wide range of soil
87 conditions, limitations, and topographic conditions. I reviewed the topographic
88 maps, soils maps, and aerial maps provided in Exhibit A – Project Mapping of the
89 Application. The definitions and characteristics of the soils shown on the soil maps
90 was not included in the Application, so I referenced that information online from
91 the National Resource Conservation Service (NRCS).
92

93 The methodology that I employed to review and assess Section 6.4.2 -
94 Groundwater, was primarily the groundwater investigations that I conducted
95 throughout my career during the preparation of hundreds of NEPA environmental
96 documents, each having to address potential groundwater resources and impacts.
97 I also recently conducted air quality and hydrogeological impact assessments for
98 natural gas wells, and I am currently involved in assessing potential groundwater
99 impacts and wetland dewatering from a stream relocation project at the Perry
100 Nuclear Power Plant in Perry, Ohio. I also referenced my experience relating to
101 groundwater conditions in wetlands and wetland mitigation, and construction
102 oversight of large capital projects, including pipelines. I also reviewed the South
103 Dakota Department of Agriculture and Natural Resources (DANR) requirements,
104 resources, and related Codified Law to compare to the Application.

105
106 The methodology that I employed to review and assess Section 6.4.3 -
107 Groundwater Impacts and Mitigation involved my experience preparing NEPA
108 environmental studies and documents, field experience providing construction
109 oversight to capital projects and pipeline projects, preparing hydrogeologic impact
110 studies, an ongoing groundwater assessment from a stream relocation project, and
111 extensive utilization of NRCS Soil Surveys for the identification of soil
112 characteristics and groundwater resources.

113
114 The methodology that I employed to review and assess Section 6.4.4 - Water
115 Uses, Section 6.4.5 – Discharge Waters, and Section 6.4.6 - Deep Well Injection,
116 I referenced the DANR Water Quality requirements and related Codified Law to
117 compare to the Application. I also used my experience with state level existing and
118 designated water use classifications, experience related to permitting and
119 construction oversight of Horizontal Hydraulic Drilling (HDD) operations, and third-
120 party waste stewardship of wastewater injection wells.

121
122 **Q: Did you review Sections 1.8, 6.4, and 6.10 of Navigator’s Application?**

123
124 A: Yes, all three sections were reviewed. Table 1.8-1 indicates that a NPDES General
125 Permit is being considered to discharge hydrostatic test water to waters of the U.S.
126 and construction dewatering to waters of the State. However, Section 6.4.5 –
127 Discharge Waters states that discharges will occur through an energy dissipating
128 device ideally located within well-vegetated upland area along the Project right-of-
129 way (ROW). This discrepancy should be remedied through consultation with the
130 USACE and DANR and fully addressed in the final Application and supporting
131 documents, including Exhibit E – Environmental Construction Guidance (ECG).

132
133 **Q: In your opinion, did Navigator’s Application adequately identify all required**
134 **permits and approvals applicable to protecting water resources? Please**
135 **explain.**

136
137 A: Based on the project description and the information provided throughout the
138 Application, the anticipated permits, consultations, and approvals were included in

139 the Application, particularly in Table 1.8-1. Section 1.3 - Project Overview states
140 that the carbon capture facilities at each carbon generator facility is not included in
141 the Application. Any required permits associated with the carbon capture facilities
142 were not included in the Application. Thus, it cannot yet be determined whether
143 those facilities would adversely impact water resources and whether the Project,
144 as a whole, would adversely affect water resources without understanding the
145 potential effects of the carbon capture facilities attached to the pipeline system.

146
147 **Q: In your opinion, did Navigator’s Application adequately address ARSD**
148 **20:10:22:15 (Hydrology)? Please explain.**

149
150 **A:** No. The series of Water Protection Maps provided in Exhibit E of the Application
151 did not contain much detail. The locations of the carbon capture facilities were not
152 identified, nor were any drainage patterns identified on the maps. The drainage
153 pattern pre- and post-construction were not shown on the maps in Exhibit E.

154
155 Section 6.4.3 – Groundwater Impacts and Mitigation states that trenching, clearing
156 and grubbing may induce temporary impacts to infiltration and wetlands. If there
157 are shallow glacial deposits encountered, it is possible to dewater a wetland by
158 disturbing adjacent upland areas via trenching. Specific glacial deposits near
159 wetlands and known infiltration areas should be identified and avoided, if possible.
160 The ECG should address the potential for encountering glacial deposits and
161 identify appropriate mitigation measures to address both temporary and potentially
162 permanent impacts to infiltration and dewatering of wetlands.

163
164 Section 6.4.3 - Groundwater Impacts and Mitigation - Clearing states that
165 vegetation would be allowed to regenerate. However, there should be an active
166 vegetative restoration process defined to stabilize soils and allow for infiltration.

167
168 Section 6.4.3 - Groundwater Impacts and Mitigation - Trench Excavation and
169 Dewatering and - Horizontal Directional Drilling state that those activities may
170 temporarily affect the water table, but the sections do not address depth of water
171 tables nor what mitigation measures would be taken.

172
173 Section 6.4.3 - Groundwater Impacts and Mitigation - Soil Mixing and Compaction
174 states that soil segregation should occur to encourage infiltration. However, it
175 states that topsoil would only be segregated in lands classified as agricultural
176 lands. This Section also states that soil compaction would be highly localized in
177 the corridor and mitigated through restoration. However, almost 112 miles of 100-
178 foot-wide easement with 50-foot-wide permanent ROW with excavation and
179 pipeline installation equipment rolling back and forth will certainly compact soil.
180 According to online soil health information, the NRCS recommends that farmers
181 take the “wait one more day” approach when considering the operation of heavy
182 equipment on wet soils because soil aggregates can be crushed and agricultural
183 production reduced. The Application and ECG do not discuss the potential impacts
184 of operating heavy equipment on wet soils. The ECG does discuss testing for soil

185 compaction and soil decompaction measures. However, Section 4.7.1 – Soil
186 Decompaction states "compacted subsoils (where subsurface rock does not
187 interfere with ripping) may be scarified or ripped to a depth up to 18 inches in lands
188 used for crop production and to a depth up to 12 inches in other agricultural lands".
189 The ECG should state the measures that would be implemented to mitigate impact
190 instead of what may be done.

191
192 In Section 6.4.3 – Groundwater Impacts and Mitigation – Horizontal Directional
193 Drilling, the Application addresses an inadvertent return to groundwater only, but
194 does not address inadvertent returns to streams and waterbodies. The ECG does
195 address inadvertent returns to streams and waterbodies and states that
196 contractor(s) will develop a site specific Horizontal Directional Drilling Contingency
197 Plan. The HDD Contingency Plan(s) have not been provided for review at this time.
198

199 In Section 6.4.4 – Wellhead and Source Water Protection Areas of the Application,
200 it states that the entire Minnehaha County is in a source protection area, however,
201 the Application does not state how much of the project would affect the source
202 protection area. The Application does later state that local coordination would
203 occur to minimize impacts and that contractors would follow the measures in the
204 ECG.
205

206 Hydrology and hydrologic features typically identified and assessed for capital
207 projects and required for federal and state permits include watersheds,
208 waterbodies, wetlands, aquifers, springs, seeps, general groundwater elevations
209 and flow direction. Some hydrologic features such as wetlands, streams and
210 aquifers were mentioned in the text and tables of the Application, but the other
211 items were not discussed at all. Thus, a full assessment of the potential impacts to
212 hydrology and hydrologic features cannot be completed at this time.
213

214 **Q: In your opinion, did Navigator’s Application adequately address ARSD**
215 **20:10:22:20 (Water Quality)? Please explain.**
216

217 A: No. The Application did not address water quality discharge related to NPDES
218 permitting for construction activities. This includes preparation of the Stormwater
219 Pollution Prevention Plan (SWPPP) for the project to be included as an Exhibit in
220 the Application. The application did not contain a SWPPP.
221

222 **Q: Does Navigator correctly identify the permits required for hydrostatic test**
223 **water withdrawal and discharge?**
224

225 A: Yes. Table 1.8-1 correctly identifies that a NPDES Permit (General Permit
226 SDR070000) Authorizing Temporary Discharges Activities under the South Dakota
227 Surface Water Discharge System would be needed to address the discharge of
228 hydrostatic test water. Table 1.8-1 also identifies that the issuance of a Permit to
229 Appropriate water would be needed for water withdrawal for temporary use.
230 Although Table 1.8-1 does not identify the issuing agency, DANR issues water

231 permits through the Water Rights Program. The Application also states that the
232 Applicant will develop a hydrostatic test plan and will obtain the necessary permits
233 and landowner permissions prior to water use or discharge activities.
234

235 **Q: Do you have any additional recommendations regarding either hydrostatic**
236 **test water withdrawal or discharge?**
237

238 A: I do not have any additional recommendations regarding the withdrawal or
239 discharge of hydrostatic test water. These activities are addressed in the
240 Application text, as well as in Exhibit E.
241

242 **Q: Did you review Stormwater Pollution Prevention Plan (SWPPP) for the**
243 **Project?**
244

245 A: No. The Applicant has not addressed NPDES construction discharge permit
246 requirements, which includes the preparation of a SWPPP for the project. A
247 SWPPP will need to be prepared. A SWPPP was not mentioned in the Application
248 or Exhibits.
249

250 **Q: What was the methodology used to locate the best location, angle, and type**
251 **of wetland and waterbody crossing?**
252

253 A: The Application did discuss a general methodology of using publicly available
254 resources, aerial mapping, and some field studies to identify and minimize impacts
255 to water resources. However, based on the mapping provided in Exhibit A – Project
256 Mapping, the proposed pipeline would cross waterbodies at various angles.
257 Waterbody crossings are typically at 90 degrees to the waterbody to minimize
258 potential impacts. Input from the state and federal agencies should be obtained
259 and will likely be required for the formal permit applications and impact
260 assessments. In addition, the Application did not mention whether jurisdictional
261 and non-jurisdictional wetlands were delineated. The federal water resource
262 permits, such as the USACE Nationwide Permit 58, will require that wetlands be
263 delineated and a jurisdictional determination provided.
264

265 **Q: What methodology did you employ for your review of terrestrial impacts?**
266

267 A: The methodology that I employed to review and assess Section 6.5.1 - Vegetation
268 included reference to various online resources, including the U.S. Geological
269 Service (USGS) National Land Cover Database map, data and mapping from the
270 DANR, and SouthDakota.gov to obtain relevant and current information to
271 compare to the Application.
272

273 The methodology that I employed to review and assess Section 6.5.3 - Wildlife,
274 which includes protected species and game species, I initially reviewed the entirety
275 of the Application since there are discussions involving terrestrial species and
276 potential impacts located throughout the Application. I also referenced the U.S.

277 Fish and Wildlife Service (USFWS) occurrences database and Environmental
278 Conservation Online Database (ECOD), the South Dakota Endangered and
279 Threatened Species Codified Law Chapter 34A-8, and online data and mapping
280 from the South Dakota Game, Fish, and Parks (GFP) to compare with the
281 Application. I also referenced the GFP Wildlife Action Plan, Species in Greatest
282 Conservation Need list, and Natural Heritage Database to compare with the
283 Application.

284
285 The methodology that I employed to review and assess ecosystems, I referenced
286 many of the sources listed above, as well as the U.S. Environmental Protection
287 Agency (EPA) Ecoregions for North America and the aerial maps provided in the
288 Application for use in remote mapping interpretation to compare with the
289 information provided in the Application.

290
291 The methodology that I employed to review and assess noxious weeds, I
292 referenced the South Dakota Noxious Weeds Codified Law 38-22 and the South
293 Dakota Noxious Weeds list maintained by the South Dakota State University
294 Extension to compare with the Application. I also utilized my work experience
295 identifying and managing noxious plants on wetland and habitat restoration
296 projects.

297

298 **Q: Did you review section 6.5 of Navigator’s Application?**

299
300 **A:** I reviewed the entirety of Section 6.5 – Terrestrial Wildlife and Ecosystems.
301 Several observations were noted and discussed in more detail in the applicable
302 answers below. These include that the Applicant did not identify ecosystems using
303 the EPA Ecoregions of North America classification system for South Dakota, there
304 is a need to complete field studies to fully determine potential impacts to vegetation
305 and noxious plants, there is a need to further address high rutting hazard soil
306 areas, breeding periods of migratory birds need to be confirmed, and there is a
307 need to conduct additional studies to determine whether habitat for the Northern
308 Long-eared bat is present in the Project area.

309

310 **Q: Please summarize what information was included in section 6.5 of**
311 **Navigator’s Application.**

312
313 **A:** The Application identified that the Project would cross the Prairie Parkland
314 Province, which is characterized by gentle rolling hills with steep valley bluffs. The
315 Application stated that elevations can range from 1,000 to 2,000 feet. The
316 Application did not state this was an elevation above sea level or clarify whether
317 elevations change by 1,000 feet in elevation along the Project corridor. The
318 National Land Cover Database was utilized to identify and describe the vegetative
319 communities in Section 6.5.1 - Vegetation, including Table 6.5-1 – Vegetative
320 Communities Crossed by the Project which quantifies the area of the vegetative
321 communities to be crossed by the Project. Section 6.5.1 also identified State and
322 County listed noxious weeds occurring within the project area and included Table

323 6.5-3 – Reported Infestations (2020) of Statewide Noxious Weeds in Counties
324 Crossed by the Project which included the acreage of reported noxious weeds
325 reported in counties crossed by the Project. Potential impacts to vegetation and
326 wildlife were also discussed.

327
328 **Q: In your opinion, did Navigator’s Application adequately address ARSD**
329 **20:10:22:16 (Effect on terrestrial ecosystems)? Please explain.**

330
331 A: No, the Application should have used the EPA Ecoregions of North America
332 classification system for South Dakota when describing the terrestrial ecosystems.
333 The Application only identified the Prairie Parkland Province ecosystem, and the
334 source was not cited. If the EPA method was utilized, multiple ecosystems would
335 be shown to be affected by the Project instead of only the Prairie Parkland
336 Province.

337
338 **Q: In your opinion, did section 6.5.2 of Navigator’s Application properly**
339 **identify the potential impacts to vegetation?**

340
341 A: The Application appears to properly identify potential impacts to vegetation.
342 Specific vegetative communities, including noxious weeds, may be identified
343 during the additional field studies and agency consultations that were mentioned
344 throughout the Application. The Weed Management Plans address pre- and post-
345 construction discovery of populations of noxious and undesirable weeds and the
346 treatment to manage them.

347
348 **Q: Do you agree with the mitigation measures Navigator plans to implement to**
349 **minimize the potential impacts to vegetation?**

350
351 A: Yes, however, Section 6.5.2 - Impacts to Vegetation and Mitigation Measures
352 states that where Conversation Reserve contracts are in place, the Applicant
353 would work with the landowner. A stronger commitment or detailed process of
354 negotiation / arbitration (e.g., negotiations involving qualified representatives of the
355 following: U.S. Department of Agriculture (USDA); South Dakota Department of
356 Agriculture, Division of Resource Conservation and Forestry, State Conservation
357 Commission; and/or GFP) should be provided. There are specific requirements
358 that landowners must follow to maintain properties in the Conservation Reserve
359 Enhancement Program (CREP). Some of these requirements could conflict with
360 the construction, operation and maintenance requirements of Navigator, such as:
361 no driving on Walk-In areas except on designated trails and parking areas; private
362 CREP lands are leased to the South Dakota Game, Fish and Parks; every acre
363 enrolled in CREP is open to the public hunting and fishing; and crop and cover
364 vegetation restrictions. A consultation process should occur between Navigator,
365 the USDA and DANR to gain a full understanding of the South Dakota CREP
366 program, limitations to the Project, identification of all of the properties involved.

367

368 **Q: Do you have any recommendations for additional mitigation measures in**
369 **order to minimize impacts to vegetation? Please explain.**

370
371 A: Vegetation restoration, erosion and sedimentation control measures are highly
372 interrelated. The Application does discuss inspections during the revegetation
373 process and for the purpose of stabilizing soils. However, Section 6.3 – Soils,
374 Erosion, and Sedimentation, specifically Table 6.3-1 – Summary of Major Soil
375 Characteristics Impacted by Project (miles) indicates a significant portion of the
376 project corridor contains soils that have a high rutting hazard. Frequent inspections
377 and special measures should be taken to ensure that contractors install erosion
378 control measures and best management practices in accordance with accepted
379 specifications and permit conditions. Also, the Applicant’s response to any needed
380 repairs should be quick and comprehensive.

381
382 **Q: In your opinion, did section 6.5.4 of Navigator’s Application properly**
383 **identify the potential impacts to wildlife?**

384
385 A: The potential impacts to Birds of Conservation Concern could not be completely
386 assessed because the number of the breeding periods and probable presence
387 information presented in Table 6.5-4 – Birds of Conservation Concern appear to
388 be incorrect. For example, Table 6.5-4 indicates the breeding period for the Bald
389 Eagle is October 15 to August 31. However, according to several sources,
390 including the USFWS and SouthDakota.gov, Bald Eagle eggs are typically laid in
391 February to March and juveniles leave nest in June to July.

392
393 **Q: Do you agree with the mitigation measures Navigator plans to implement to**
394 **minimize the potential impacts to wildlife?**

395
396 A: I generally agree with the mitigation measures that Navigator plans to implement
397 to minimize the potential impacts to wildlife. The Application states that access to
398 CREP Walk-in Access areas for hunting may be blocked during construction. As
399 noted in the Application, these areas may vary by landowner and it may be
400 important for landowners to have wildlife harvested if they are causing damage. I
401 would think it reasonable for the ECG or the contractors to have a formal plan to
402 address communications with landowners and perhaps redirecting hunters who
403 want to hunt those Walk-in Access areas. Also, knowing there is a formal process
404 and identification of Walk-in Access areas for hunting, it would be a best safety
405 practice to require high-visibility clothing for onsite contractors and personnel
406 during hunting seasons and perhaps signage along the Project corridor to alert site
407 workers and potential hunters of the site activities. Although Section 6.5.4 –
408 Impacts to Wildlife and Mitigation Measures states that trench plugs, ramps, and
409 gaps in construction areas would be implemented to facilitate wildlife crossings,
410 the Application and ECG do not include any information about how to address any
411 wildlife, and particularly big game animals or even livestock that happen to enter
412 the pipe trench or other excavated areas.

413

414 **Q: Do you have any recommendations for additional mitigation measures to**
415 **minimize impacts to wildlife? Please explain.**

416
417 A: Section 6.5.3 - Wildlife states that highly disturbed areas are likely to have a greater
418 abundance of species. This statement was not sourced, and it is my experience
419 working on habitat improvement projects and through consultations with numerous
420 Game Commissions and Natural Resource agencies that edge habitats typically
421 have the highest diversity and abundance of wildlife. The placement and disposal
422 of brush from the clearing and grubbing process is discussed in the ECG. The
423 strategic placement and sizing can provide beneficial habitat and wind breaks for
424 wildlife. Consultation with landowners, DANR and GFP should occur to obtain
425 information on the placement, sizing and use of brush piles to enhance wildlife
426 habitat.

427
428 **Q: Did the Applicant consider only mist netting (capturing) potential individual**
429 **Northern Long-eared bats or were other identification measures**
430 **considered?**

431
432 A: Section 6.7.1 - Impacts to Threatened and Endangered Species and Mitigation
433 Measures states that the Northern Long-eared Bat is presumed to be absent on
434 the Aurora line because no individuals were captured. Although Table 6.7-1 states
435 that acoustic surveys have and will take place at suitable habitat locations in South
436 Dakota, the Application does not provide details on overall methodology or if the
437 acoustic surveys identified any sounds from Northern Long-eared bats. As noted
438 in Table 6.7-1, additional studies would be needed to confirm the absence of these
439 bats.

440
441 **Q: Does this conclude your testimony?**

442
443 A: Yes.

Brian Sterner

Principal Consultant, Scientist

Brian has extensive regional and local experience with major capital projects, including functioning as a NPDES compliance specialist and permitting SME for a major petrochemical complex. He has broad experience related to land and water resource impact analysis and permitting, including performing function and value assessments of terrestrial and aquatic habitats. Brian has led agency consultations, provided expert testimony to state and local agencies, sponsored partnering workshops and managed stakeholder coordination for permitting and resource mitigation and compensation projects. He has conducted thousands of wetland and stream delineations, as well as environmental assessments in DE, NJ, OH, PA, and WV. Brian is listed as a Qualified Botanist by the PA Department of Conservation and Natural Resources, Bureau of Forestry, and is a trained plant taxonomist.

Experience: 35 years experience in environmental, social, and cultural impact assessments, natural resource impact evaluation and permitting, construction management and compensatory mitigation.

Email: brian.sterner@erm.com

LinkedIn: <https://www.linkedin.com/in/brian-sterner-200b7728/>

Education

- B.S. Biology, Grove City College, USA, 1988
- NPDES Permitting – USDA, NRCS
- USACOE Wetland Identification and Delineation
- ESCGP & Pipeline Permitting, PADEP
- Chevron Vetted QEF and HES GO trainer
- Shell Lifesaving Rules Certified
- OSHA 40 hour HAZWOPPER & 9.5 hr. O&G H&S Cert.
- SafeLands/SafeGulf, H&S Training
- ArcGIS - ESRI

Professional Affiliations and Registrations

- Prof. Wetland Scientist (Soc. of Wetland Scientists)
- PA Certified Pesticide/Herbicide Applicator
- Independent Oil and Gas Association
- Marcellus Shale Coalition (MSC)

Languages

- English, native speaker

Fields of Competence

- Project siting, environmental impact assessments & permitting (USACOE, US Coast Guard, Ohio EPA, PA DEP, WV DEP)
- NEPA and natural resource permitting
- Construction management / inspection
- NPDES compliance & permitting
- Environmental impact and cost reduction
- Wetland & stream surveys & mitigation
- Threatened & Endangered species surveys
- Agricultural land impact assessments
- FERC Environmental Review and Compliance
- GIS mapping and analysis
- Reforestation planning & design
- Due Diligence - Phase I & II ESAs
- Invasive species management
- HSE Trainer

Key Industry Sectors

- Oil & Gas – Upstream, Midstream, & Downstream
- Transportation
- Power
- Real Estate & Land Development
- Financial

Publications

1988. First Year Evaluation of Mitigated Wetlands on Two Mine Sites in Western Pennsylvania. US DOI, Bureau of Mines and Office of Surface Mining Reclamation and Enforcement.

Key Projects

Shell Polymers, Permitting, Compliance, Construction Management & Emergency Preparedness, 2011 to 2022

Developed and maintain environmental permit compliance register for new 6.1B world-class petrochemical facility which just recently completed construction in Beaver County, PA. Prepared reforestation plans and supervised the implementing contractor. Prepared an invasive species management plan and personally applied targeted herbicide in the reforestation areas. Prepared a bald eagle and osprey management plan, including construction of an osprey nest platform. Also prepared numerous support studies and documentation for NPDES permit applications, USCOE Section 404/PADEP Chapter 105 permit, FCC and FAA clearances, and local permits and approvals. Prepared detailed GIS mapping of complete drainage systems, firefighting system, and evacuation plan for Emergency Response Plan.

Dominion Natural Gas, JB Tonkin Compressor Station, Stormwater Management, 2020-2022

Construction Manager for the installation of a proprietary underground stormwater management collection and storage system. Presence of 100-year floodplain and elevation of surrounding features required installation of underground stormwater management system.

Apex Energy, Air Modeling & Hydrogeologic Assessments for Well Pad Development, 2016-2018

Project Manager for the preparation of air modeling and hydrogeologic studies for the development of eight well pads. Project including providing successful expert testimony at over two dozen Zoning Hearing Board meetings.

Columbia Gas, FERC EIS for Leach XPress Pipeline, 2014-2016

Deputy PM as third-party consultant to FERC to prepare Draft and Final EISs for approximately 160 miles of new 30-36" natural gas pipeline, compressor and regulator stations, and pig launchers in OH, PA, and WV. Responsible for all portions of project,

prepared NOIs, Scoping Meetings and Hearings, Resource Reports, Data Requests, and coordination with FERC, and other federal and state agencies.

Huntsman Advanced Materials, Environmental Audit Corrective Actions, 2020 to 2022

Project Manager for completing corrective actions following an internal self-audit of environmental conditions of the chemical manufacturing plant. Prepared monthly progress reports to the USEPA and PADEP, Preparedness, Prevention, and Contingency Plan, comprehensive site safety documents and procedures, including onboarding and refresher trainings, hazardous material labeling and handling, and detailed safety station GIS mapping.

Huntsman Advanced Materials, Streambank and Soil Management and Remediation, 2020 to Current

Project Manager for the remediation and restoration of a streambank adjacent to a chemical manufacturing facility. Site also has soil contamination under the concrete slabs that requires delineation of the contamination and monitoring for vapor intrusion. Prepared stream encroachment permit application, Opinion of Probable Cost remediation estimates, and teaming with state and local permitting agencies.

First Energy, Perry Nuclear Power Plant, Stream Relocation and Wetland Monitoring, 2016-2022

Served as an SME regarding wetlands and streams for the relocation of a stream with an extensive system of adjacent forested and emergent wetlands. Provided oversight of groundwater monitoring, wetland vegetation monitoring, and invasive species management.

Shell Appalachia, Integrated Vegetation Management for Natural Gas Exploration Sites, 2013-2016

Project Manager for the development of an integrated approach to implement restoration measures on oil and gas development & construction sites. Developed methodologies and specifications for post operation reconstruction, restoration, re-

vegetation with targeted species, management of invasive species, and a GIS-based impact and restoration tracking tool for sites and corridors.

Shell Appalachia, Impact Assessment & Cost Reduction Evaluation, 2013

Assessed and identified opportunities to reduce environmental and social impacts and implement cost-saving measures. Initiated focused alternatives and developed white paper on improving engineering design and material use to reduce costs by \$8 to \$14 million.

Nalco Water, HSE Practical Trainer, 2013-2021

Lead trainer for onboarding and legacy HSE practical safety training classes, including hands-on training for horizontal and vertical confined space entry, lock out/tag out, working at heights, ladder safety, chemical transfer/handling, risk assessments, permit to work, and ergonomics.

Shell Appalachia, EIS for Natural Gas Exploration & Production in NY, PA &, OH, 2012-2014

Project Manager to complete the Impact Assessment (IA) for a major exploration and production company's Appalachian unconventional shale gas asset. The IA was designed to be a flexible and evergreen tool, to adjust specifically to the company's evolving business and functional needs. The IA included the assessment of over 8 million acres, including 14 counties in PA, three counties in OH, and four counties in NY.

Apex Energy, Donegal South Pipeline, Westmoreland County

Project Manager and field inspection and documentation of erosion and sedimentation pollution control BMPs along 15 miles of pipeline corridor. The additional need for BMPs were identified, logged and tracked to ensure implementation and compliance with permits.

PA Turnpike Commission, Amos K. Hutchinson Bypass, Westmoreland County

Construction management and inspection of the construction of over 13 miles of new toll highway. Supervised the construction of numerous culverts, bridges, excavations and installation and

maintenance of erosion and sedimentation controls and BMPs.

Apex Energy, Ninevah-15-17 E&S Plan for Gathering Line, Greene County, PA

Project Manager for the preparation of an Erosion and Sedimentation Pollution Control Plan (E&S) for the construction of a natural gas gathering line.

PA Turnpike Commission, I-76 North Park Wetland and Stream Mitigation Plan, Allegheny County, PA, 2011

Project Manager for design and restoration of over 2,450 lf of degraded streams and creation of over 2 acres of wetlands within Allegheny County's North Park. The project included wetland delineation, baseline aquatic resources survey, utility coordination, and coordination with Pine Township Watershed Association. The site planting plan included over 4,000 trees, shrubs, and willow cuttings, installation of bat houses, numerous stream stabilization features, and the installation of an elevated walkway for educational purposes. The site received public recognition and named, "Wahdo:Gwas" by the Seneca Nation. The PADEP allowed the required 5-year site monitoring to be concluded early due to the extensive diversity and overall site success.

PennDOT District 12-0, State Game Lands #297 Wetland Mitigation Bank, Washington County, PA, 2011

Project Manager for the preliminary design of the 8.5 acre wetland mitigation bank project in Washington County, PA. Project included delineation of existing wetlands and baseline aquatic resources survey, development of water budget, E&S Plan, Phase I Archaeology study, planting plan, threatened and endangered species clearances, coordination with lease farmer, site surveys, and implementation of safety measures for field work during hunting season to manage and avoid stakeholder conflicts.