INTRODUCTION

We, the members of the Forty-Sixth Statewide Investigating Grand Jury, having received and reviewed evidence regarding allegations of violations of the Solid Waste Management Act, the Clean Streams Law and related laws, occurring in Greene and Clearfield Counties, Pennsylvania, pursuant to Notice of Submission of Investigation Number 63, do hereby make the following findings of fact, conclusions, and recommendation of charges.

FINDINGS OF FACT

The Grand Jury conducted an investigation into environmental crimes that occurred during the operation of multiple well pads in Greene and Clearfield Counties that were owned by Energy Corporation of America ("ECA") and now by Greylock Production, LLC ("Greylock").[1] During this investigation, the Grand Jury determined that Donald Supcoe, III failed to abide by the environmental regulations that were applicable to the use of onsite pits and directed the transfer of water in a manner that utilized the onsite pits as centralized impoundments. He also directed the burial of waste on the former Hoge Noce well pad and was involved in the spill of surfactant at the Beacon well pad. All of this activity allowed contaminants to enter into the soil and groundwater in the area. Supcoe's illegal conduct adversely affected the environment and the lives of the neighbors living near the sites.

I. Donald Supcoe, III

Donald Supcoe, III ("Supcoe"), or "D3" as he was known to his colleagues, began his employment with ECA when he was sixteen years old and worked as a general laborer during his summers. After graduating from college with a marketing degree, he began full-time employment with ECA as a swab rig foreman. As he progressed through the company, his job responsibilities

[1] ECA sold its assets to Greylock on November 30, 2017.

included overseeing other foremen, overseeing the operations/permitting agent, as well as managing the movement of water from pad to pad. When Hugh Caperton ("Caperton") left ECA, Supcoe assumed his role as operations manager. Once Greylock purchased the company, Supcoe's title became Director of Land Operations and Permitting. He left Greylock in May, 2020. He currently owns Stone Ridge Energy, a company with assets that include both conventional and unconventional wells in addition to midstream assets. Many current and former ECA/Greylock employees who appeared before the Grand Jury testified that they reported to Supcoe.

II. A Brief Description of Unconventional Drilling

The Grand Jury learned that unconventional drilling for natural gas provides for the extraction of oil and gas from once unsuitable geological formations. In Pennsylvania, unconventional drilling has targeted the Marcellus and Utica Shale formations. The Marcellus Shale gas deposit stretches beneath 575 miles of West Virginia, Pennsylvania, Ohio and New York.

The process of drilling and fracking a well takes place in several stages. First, the well site is prepared by clearing and leveling the land and constructing the production infrastructure. This includes creating a well pad for the drilling rig and other equipment, building an access road to the well pad and (until recently) digging pits to hold fluids, soil and rock fragments - - called drill cuttings - - that are produced by the drilling and hydraulic fracturing process.

Once the site is prepared, drilling of the wells can begin. The drilling process occurs in stages and utilizes large machinery to drill into the earth. Fluids and chemicals are used to assist in the drilling process in order to manage the friction of the drill and allow the drill cuttings to move up and out of the well. As each section is drilled out, pipe of various diameter is inserted

into the ground to stabilize the hole, or wellbore. This pipe is called a casing. Cement is then typically pumped between the wellbore and the pipe to secure the pipe in place. A smaller diameter wellbore is then drilled into the next depth of the earth. When that portion is drilled out, a smaller pipe is placed within the next section of wellbore and cement is again poured between the wellbore and the pipe to secure it. This process continues until the wellbore reaches the depth of the resource-bearing rock formation. When the wellbore reaches its target formation, its trajectory is slowly turned from vertical to horizontal and drilling continues for several thousand feet.

Once the drilling process is complete, perforating guns are lowered into the horizontal portions of the well and explosives are detonated to puncture holes through the cement and the casing and into the rock formation. This is when the hydraulic fracturing process begins. The Grand Jury heard testimony that the gas sought in fracking operations does not flow freely, but is locked into rock formations called shale. Multiple fractures are created in the rock by pumping large quantities of fluids at high pressure down the wellbore and into the target formation. Hydraulic fracturing fluid commonly consists of water, plus chemical additives and a granular material called proppant that open and enlarge fractures within the rock formation. The proppants, which consist of sand, ceramic pellets or other small particles, help keep the newly created fractures from closing up so that the gas that was trapped inside the shale can be released.

The hydraulic fracturing process uses incredibly large amounts of water, sometimes up to 15 million gallons of water for one well. Much of the water that is injected into the well will return to the surface as waste water - - also known as flowback or production water- - and must be collected, treated or disposed of in accordance with Department of Environmental Protection ("DEP") regulations. In the early days of fracking, this was often accomplished by use of pits or impoundments on or near the well site that would store the waste water temporarily. The waste

water contains the potentially dangerous chemical additives used in the drilling process, and additional compounds as well, such as chloride, strontium and radium, that had been safely locked away in the underground rock formations, but are now broken free and come to the surface in the flowback. When the waste water comes back out of the well, the proppant remains in the fractures and the natural gas begins flowing upward. At this point, the well is said to be in production. It is common for multiple wells to be drilled and fracked on a single site.

At the end of the life of a well pad, or nine months after the wells onsite have been drilled, any pits on the pad must be reclaimed. The Grand Jury learned that this process is time intensive and includes multiple steps. The first step is to remove the fluids from the pit. Once the liquid was removed, there would be a sludge that remained in the bottom of the pit. With respect to ECA, the company hired a consultant to sample the sludge at its well pads in order to fill out the Form U for disposal at a landfill. The consultant would come and collect a sample of the sludge while it was still in the bottom of the pit. Once samples had been collected, the process of removing the sludge began. A subcontractor would typically set up a pump that would re-circulate the water so that they could blast the sludge with firehoses to break it up and push it into the pump. The water and sludge would then go through a centrifuge which would spin any of the water out of the solids. The solids would move into a bin and the water would be re-circulated so that the process could continue. If the solids were dry enough, they could be placed into tri-axles for being hauled off site for disposal. If the solids still had too much liquid in them, they would be placed into roll off boxes so that they could be mixed with various materials to remove more of the water content. Prior to being removed from the site and disposed of at a landfill, someone would scan the boxes for radiation levels as part of the Form U process. Once the sludge had been removed, the liner would be pressure washed to remove any lingering sludge. If an environmental consultant was

involved with the site, they would come out at this point and inspect the liner for any holes or other questionable areas. After that, the liner would be removed, along with the felt underneath the liner. The witness assured us that there would never be a time when the liner or the felt would remain inside a pit that was being reclaimed. The environmental consultant would then inspect the soils underneath the former pit and collect samples. Once the samples came back, the environmental consultant would mark an area that would need to be dug out and then a contractor would come and remove the marked soils. After removal of the soils, the environmental consultant would collect new samples to ensure that all contaminated soils had been removed. That process would continue until all contaminated soil had been removed or the contractor hit bedrock. The contaminated soils would be disposed of at the same landfills that took the sludge and also had to have a Form U that accompanied them. Once all the contaminated soils were removed, the hole would be filled in with clean fill, topsoil would be added, grass seed would be planted and the site would be monitored to ensure that grass was growing.

III. Wells are Drilled in Greene and Clearfield Counties

ECA operated multiple well sites in Greene and Clearfield Counties. The chart below sets forth the sites that are relevant to the Grand Jury's investigation.

WELL SITE	TOWNSHIP	COUNTY	ESCGP PERMIT APPROVAL DATE	DATE OF EXPIRATION OF FINAL WELL PERMIT FOR SITE	DATE OF LAST ACTIVE WELL COMPLETED	DATE OF REMOVAL OF FLUIDS FROM IMPOUNDMENT
Blaker Minor	Cumberland	Greene	4.21.2010	4.14.2011	7.18.2011	Prior to 3.13.2017
Britner	Cumberland	Greene	9.28.2011	10.14.2012	9.11.2012	Prior to 3.13.2017
Broadwater	Jefferson	Greene	9.13.2013	2.6.2015	4.17.2015	Prior to 3.13.2017
Coldstream A	Goshen	Clearfield	11.20.2009	9.28.2010	3.28.2011	Prior to 3.13.2017

Coldstream B	Goshen	Clearfield	11.20.2009	7.5.2013[2]	1.13.2013	Between 11.1.2016 and 11.17.2017
Fuller A	Cumberland	Greene	4.7.2009	2.16.2011	9.13.2010	Prior to 3.13.2017
Fuller B	Cumberland	Greene	10.11.2011	4.20.2013[3]	1.20.2013	Prior to 11.17.2017
Gribble	Cumberland	Greene	6.30.2009	10.22.2010	8.20.2010	Prior to 3.13.2017
Hoge Noce	Cumberland	Greene	2.7.2009	4.2.2013	8.10.2012	Prior to 3.13.2017
Meadows	Cumberland	Greene	4.12.2010	10.12.2011[4]	8.30.2011	Prior to 3.13.2017
Mohr A & B	Cumberland	Greene	4.19.2011	5.16.2012[5]	5.2.2012	On or about 6.21.2015
Pechin	Cumberland	Greene	11.2.2010	1.20.2012[6]	10.20.2011[7]	On or about 6.13.2018
Penneco Morrow	Whiteley	Greene	7.15.2009	6.9.2011	8.8.2010	Prior to 3.13.2017
Sharpnack	Cumberland	Greene	8.2.2011	3.5.2014[8]	7.8.2015	Between 5.8.2017 and 11.17.2017
Skib B	Jefferson	Greene	5.18.2009	11.13.2014	3.10.2014	Prior to 3.13.2017
Stelco	Jefferson	Greene	8.23.2013	10.31.13[9]	9.8.2014	On or about 8.8.2018
Whitetail	Goshen	Clearfield	7.28.2010	5.6.2015[10]	10.12.2012	Prior to 11.17.2017

The Grand Jury learned that almost every unconventional well site in Pennsylvania has an onsite pit that can be used to handle temporary storage of water from the wells on that site. The water typically stored in these pits is not fresh water, however. Instead it is usually a combination of flowback and production water that comes from a well.

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[2] This site also included a well permit to drill a Utica well that was approved on 11.21.2017.

[3] This site also included a well permit to drill a Utica well that was approved on 11.21.2017.

[4] This site also included a well permit to drill a Utica well that was approved on 11.20.2017.

[5] This site also included a well permit to drill a Utica well that was approved on 9.8.2014.

[6] This site also included two well permits to drill Utica wells that were approved on 2.8.2017.

[7] ECA requested and received from DEP a 6-month extension for reclaiming this pad.

[8] This site also included a well permit to drill a Utica well that was approved on 11.20.2017.

[9] This site also included three additional well permits that were approved on 11.20.2017.

[10] This site also included a well permit to drill a Utica well that was approved on 10.15.2015.

As the ECA well pads were constructed and wells were drilled and fracked, there began an elaborate charade of moving water from one location to another. The environmental regulations only allow for limited movement of water if an operator is using onsite pits. The water can only be removed from the pad where it comes out of the well as flowback or production water and then taken to another pad for use in fracking the wells on that pad. Building and utilizing centralized impoundments allows free movement of water that is not bound by the same limitation that on-site pits must adhere to.

An alternative to onsite pits that existed at the time of ECA's activity was the use of centralized impoundments. The Grand Jury learned that the benefit of building and utilizing a centralized impoundment instead of an onsite pit is that it allows the company to use it as a centralized location for water storage that could service multiple well pads in the area without any constraints on the movement of the water. Additionally, there are no limitations on the amount of time that a centralized impoundment can remain onsite. Centralized impoundments are generally very large pits that have very specific construction standards that take into account that they may be in existence far longer than the time frame contemplated by the on-site pits. Although the standards have evolved over time, what has been required since 2010 is a dual liner that contains a leak detection zone between the liners as well as a monitoring system that can detect the entry of contaminants into the ground or surface water.

The Grand Jury heard testimony from a permitting technician that began working for ECA in 2011. His job responsibilities include obtaining the various types of permits that are required to operate a well pad, including the permits that are required to build the pads themselves and to drill the wells on the pad. He testified that ECA "explored the idea of permitting a centralized storage facility" but that the company never obtained the necessary permits from DEP. He testified

that he was aware of the limitation on the movement of water from the on-site pits. He acknowledged that water could move from one site and could be "brought forward" for the purpose of re-using it at a second well pad.

The Grand Jury learned that instead of complying with the regulations that apply to onsite pits, ECA moved water multiple times to all of their pits, essentially using them as if they were, in fact, centralized impoundments, even though they were not permitted or built that in that fashion. The Grand Jury reviewed internal ECA documents that showed hundreds, and, in some cases, thousands of water transfers in and out of a pit. Oftentimes, these water transfers went on for years after the last well on the pad had been drilled and fracked. ECA employees who were tasked with moving water from one pad to another appeared and testified before the Grand Jury. One former operations and permitting agent testified that it was not until he met with DEP on June 17, 2015 that he had even heard the term "centralized impoundment." He stated that until a DEP representative explained to him that the movement of water from one pad to another is largely governed by the type of pit that the well pad holds, he had been unaware that ECA was using their pits inappropriately. He recalled that he and Donald Supcoe, III ("Supcoe") were present at this meeting and described the discussion as "eye opening." He testified that Supcoe at the time held an operations manager type of role with the company and that it would have been reasonable for him to be aware of the regulations that were applicable to various types of pits. He testified, "I think as a holistic end in the company, they maybe were a little bit under on the compliance understanding of the proper way to stay in the—within the guidelines of the regulation at that time."

An ECA water foreman testified that he handled trucking logistics for the movement of water from one location to another. He stated that during his time with ECA, he was unaware that

there were limitations on the movement of water from one site to another. He was also unaware that there were limitations on the length of time that a pit could be present on a site. He testified that the two individuals within ECA who directed the movement of water from pad to pad were Caperton and Supcoe. The foreman explained the documentation that he would submit for the movement of water from one pad to another. Much of this documentation was sent directly to Supcoe. The Grand Jury reviewed one set of spreadsheets that was submitted on July 6, 2015 that covered water transfers from January through July, 2015 for one particular trucking company. On April 3, 2015, the company moved water from the Whitetail impoundment to the Stelco impoundment, despite the fact that all of the wells on the Stelco pad had been fracked in September 2014. When asked, the foreman testified that this documentation was evidence that water was moved from one location to another without the intention to use the water to frack wells on that second location. He testified that this type of movement of water was common when he was working as the foreman for ECA.

IV. Reclamation of the Hoge Noce Well Pad Begins

The Hoge Noce well pad was built by ECA in late 2009. The wells were drilled and completed by August 2012. The site was then reclaimed beginning in the fall of 2012. J.D. Sollon. Jr. ("Sollon"), a Greylock employee that had also worked for ECA, testified that he was involved in the reclamation at Hoge Noce and that the sludge removal at that site took about four months. The Grand Jury reviewed the Form U paperwork for waste from this pad and the applications were initialed by Sollon.

The Grand Jury heard testimony from the environmental consultant that completed and submitted the Form U paperwork to DEP on behalf of ECA. He was employed by RZI. He

testified about the process that took place at Hoge Noce. He explained that the Form U is a method of gaining approval for waste disposal. It involves an application process that requires collection of certain data through sampling and analysis of the waste that is intended to be disposed of in Pennsylvania. That application is submitted to DEP for approval. He testified that Sollon would contact him or his daughter and direct them to the site they needed to visit in order to collect samples and submit a Form U.

Another RZI employee testified that she was present on the Hoge Noce well pad in the fall of 2012. At that time, one of the pits on the well pad had already been reclaimed. The remaining pit still had water in them. She testified that she informed ECA that she would not be able to collect a sample from the impoundment until it was de-watered. She did not return to the site until June 2013. She recalled that when she returned in June, some of the sludge from the bottom of the pit was being stored in vacuum boxes onsite. She testified that she had to climb to the top of the boxes to collect a sample of the sludge for submission to the laboratory. She indicated that she had to return to the site "a lot" because the radiation levels were too high for disposal in Pennsylvania. She testified that RZI negotiated a process with DEP for disposal of this waste since it was highly radioactive. She indicated that DEP agreed that ECA could mix the sludge with clean fill in an effort to cut the radiation to levels suitable for disposal. While this process was successful in cutting the radioactivity of the waste, it also generated much larger volumes of waste to dispose. She testified that her involvement at the site was limited to the sampling and analysis of the waste. She did not know whether the waste actually left the site or whether it went to the chosen Pennsylvania landfill for disposal after she completed her responsibilities.

A former employee of Mohr Excavation & Trucking, a sub-contractor that ECA utilized for various construction projects at their well sites, also appeared and testified before the Grand

Jury about his involvement in the reclamation of the Hoge Noce pad. He recalled being involved in cleaning the sludge out of the bottom of the upper pit after the water had been removed. He explained that the sludge would have the water removed from it and then it was put into large containers where additional material was added to it to cut down the radioactivity of the sludge. He testified that a father-daughter team would then arrive with a Geiger counter and measure the radioactivity of the boxes once he had finished blending the sludge with the other material. He indicated that this time-intensive process went on for about three months but it ceased once ECA was over budget. At that time, ECA buried the remaining sludge onsite. He indicated that the sludge that remained in the pit at the point when they stopped removing it covered about 25 feet of the width and the entire length of the pit and was about four feet deep. This former employee informed the Grand Jury that Sollon and Supcoe were the individuals who directed the activity on the Hoge Noce site and that it was Sollon who ordered him to leave the remaining sludge in place and bury it. Although the order came from Sollon, the witness testified that Supcoe "was the main one in charge" and was probably behind the decision to cease the disposal process at Hoge Noce.

He testified that once he received the order from Sollon, he and others cut the liner on the lower end of the pit, "pushed it all back down in there, and corralled everything up against the wall, then covered it in with dirt." He indicated that once they cut the liner and peeled it down, he could see black soil underneath the liner. None of the impacted soil was removed. It simply remained in place and clean soil was brought in to fill in the hole. He testified that the process of filling in the hole with soil took one day. He agreed that the cost of paying a sub-contractor for a day's work to fill in the former pit with soil was far cheaper than continuing to pay to pull out the sludge, have it sampled for radioactivity, and then sent for disposal.

V. The Illegal Activity at Hoge Noce is Uncovered

Moody and Associates, Inc. ("Moody"), an environmental consultant hired by ECA, investigated the Hoge Noce pad after DEP became suspicious that many of ECA's well pads had leaking pits on them. This was a location that had been closed and reclaimed prior to DEP's suspicions and prior to Moody's involvement. During Moody's investigation at the Hoge Noce pad, various soil samples were collected utilizing direct push technology from the previously remediated pits and several monitoring wells were installed. The Grand Jury reviewed the report that Moody submitted to DEP regarding their investigation at this location. The report stated "[b]ased on the results of this investigation, it appears that a portion of impacted soils associated with releases from two former wastewater impoundments...remains on-site." A former DEP employee who had been employed in the Environmental Cleanups Program informed the Grand Jury that she had been tasked with reviewing the data submitted by Moody related to this location. She testified that there was little known about the history of the site including how the pits were built, what they held and their size. She testified that when she reviewed historical aerial photographs, she found one pit that disappeared from the location prior to the other pits being built that was never mentioned in any of the reports. She went on to testify that Moody had initially installed a temporary monitoring well downgradient of one of the pits that showed contamination. When Moody went back to install the permanent monitoring wells, they failed to install one at this location. She indicated that many of the permanent monitoring wells that were installed at this location seemed to be strangely placed where one would not expect to find evidence of contamination, if such evidence were to exist at the site. She also explained that Moody did install one monitoring well right in the middle of one of the former pits. That particular monitoring well

has "extremely high concentrations of contaminants of concern at increasing levels." She explained that this was concerning because this particular pit had been closed for years, and yet the pollution into the groundwater continued to worsen instead of lessening over time. She went on to state that the data "suggests that whatever remediation was performed was insufficient and there is some source there that is being activated or reactivated perhaps with storm water or something."

A Grand Jury search warrant was executed at the former Hoge Noce well pad on July 20, 2021 at the pit that was alleged to have been buried in place. Agents from the Office of Attorney General Environmental Crimes Section arrived on location with a geoprobe to take core samples of soil from underground. In addition to collecting samples from suspect locations, the agents collected a background sample from outside the area that was suspected to be contaminated for the purpose of comparison. During the sampling event, approximately 19 to 20 feet underground, the agents encountered pieces of what appeared to be liner, as well as the geotextile material that is placed underneath the liner in a pit. Agents also observed black sludge at that same depth and location, as well as at additional locations. Photographs of what appeared to be liner and geotextile that were found buried at Hoge Noce were shown to Sollon. He acknowledged that the photographs appeared to be of geotextile and liner. When asked if there was any reason that these materials should be encountered at 18 ½ feet below the ground surface, he responded, "[n]o. None." Photographs of a sludge-like material that was discovered at Hoge Noce were also shown to Sollon. He confirmed that the photograph could be depicting sludge. The materials that were encountered during the search warrant were bottled, labeled and sent to the Pennsylvania Department of Environmental Protection Bureau of Laboratories for analysis. The results detected the presence of 1,2,4 Trimethylbenzene, 1,3,5 Trimethylbenzene, and n-Butylbenzene in the soil

sample. Another sample detected the presence of Bis(2-Ethylhexyl)phthalate. A comment from the lab indicated the presence of a petroleum product in that same sample. Several of these compounds are consistent with petroleum-based substances that do not occur naturally in western Pennsylvania. None of these compounds were present in the background sample that was collected outside of the former impoundment.

The Grand Jury reviewed a Certification of Records from DEP to confirm that no person ever applied for, nor was granted a permit or an exemption to a permit pursuant to the Solid Waste Management Act or the Clean Streams Law, to dump or deposit any waste from any source at or near the Hoge Noce site in Greene County.

VI. The Beacon Pad

The Beacon well pad was built in 2019 and is located in Greene Township, Greene County and is operated by Greylock. A DEP inspector testified that the site was constructed improperly and had numerous site violations in terms of the construction, the erosion and sedimentation, and pollution to streams. He testified that the pad had "literally thousands of violations."

According to a Department of Environmental Surface Activities Inspection Report, a spill on the Beacon Pad was reported on February 10, 2020. A DEP water quality specialist supervisor spoke with a Greylock representative the following day and was told that while drilling, the company was using a "filming agent[11]" and that foam from an open-topped tank onsite blew onto the well pad and then traveled to the pad's drainage ditches through a failed seam in the

[11] An attempt to learn what this particular product was by checking the FracFocus website for chemicals used on the Beacon well pad proved to be unsuccessful because the Oil and Gas Act only requires a company to disclose chemicals used during the hydraulic fracturing process and not during drilling. (See 58 Pa.C.S.A. §3222.1, Hydraulic Fracturing Chemical Disclosure Requirements)

containment. The foam then traveled to the sediment basin onsite and then into an unnamed tributary to Frosty Run.

An inspection of the site occurred on February 14, 2020, at which time the sediment basin was overflowing and the stream was laden with multiple large piles of foam, indicating, from the inspector's perspective, ongoing impact related to the spill.

Another DEP inspector testified about the Beacon site and this particular incident. He recalled that, during a random inspection that he conducted on the pad subsequent to the release of the foam, he came upon some sub-contractors spraying a material onto rock above the mouth of the stream. He questioned the men onsite as to what they were doing and was advised that they were directed to spray laundry soap or fabric softener onto the rocks. The inspector followed up with a Greylock employee, who told him that it was actually a de-foaming agent that was being utilized on site. He requested a copy of the SDS sheet for the product and learned that the product was not to be used in aquatic environments.[12] The inspector thereafter learned about the initial incident that occurred on the site. It was in response to this spill that Greylock directed that a chemical defoaming agent be applied to the water. It is important to note that the defoamer just gets rid of the bubbles on the surface and does nothing to assist with removal of the chemical properties of the surfactant from the water. Essentially, Greylock added the defoamer to remove the visual evidence of the impact to the stream and, in so doing, further impacted the stream. The inspector explained that without the visual bubbles on the water, someone would have had to collect a water sample and send it to the laboratory to know that the water was impacted. Supcoe

[12] The Grand Jury was not provided with the SDS sheet for this defoaming agent. An attempt to learn what this particular product was by checking the FracFocus website for chemicals used on the Beacon well pad proved to be unsuccessful because the Oil and Gas Act only requires a company to disclose chemicals used during the hydraulic fracturing process and not chemicals that are utilized to cover up evidence of a spill on site. (See 58 Pa.C.S.A. §3222.1, Hydraulic Fracturing Chemical Disclosure Requirements)

was onsite for an inspection at one point and made the comment that because Greylock owns the property on which the Beacon site sites, they too own the streams on the property and they "like them that way" - - meaning polluted with sediment and other chemicals. The DEP inspector assured the Grand Jury that simple property ownership does not give any individual or corporation the freedom to pollute waters of the Commonwealth. He also explained that Greylock never contacted DEP to obtain approval for the addition of the defoamer prior to using it on the site.

Greylock hired Moody to conduct an investigation into this spill at the Beacon Pad, including the collection of water quality samples at the site following the release. Moody went to the site on February 11, 2020 to collect samples from the sediment basin, as well as the unnamed tributary to Frosty Run. Subsequent analysis of these water samples revealed the presence of methylene blue active substances (MBAS[13]) in both the sediment basin and the unnamed tributary. Analysis was also requested for tentatively-identified VOCs and SVOCs. That analysis showed the presence of propylene glycol, a compound identified in the SDS of the drilling fluid surfactant, in the sample collected from the sediment basin. Moody continued to collect water samples on a weekly basis and confirmed that the MBAS and propylene glycol levels in the water decreased to levels that were non-detectable at the laboratory.

VII. Applicable Environmental Statutes

The Grand Jury learned much over the course of this investigation about the applicable statutes that govern this conduct. The relevant portions of the Solid Waste Management Act define "disposal" to include spilling or leaking. "Residual waste" is any waste, solid or liquid, from industrial or mining operations. "Solid waste" also includes both solid and liquid materials.

[13] MBAS are anionic surfactants, such as detergents or foaming agents.

The Grand Jury reviewed various statutory provisions within the Solid Waste Management Act that delineate criminal conduct that is relevant to our investigation. Section 6018.301 makes it a crime to store, transport, process or dispose of residual waste unless it is consistent with or authorized by the rules and regulations of the department. It further criminalizes the ownership or operation of a residual waste processing or disposal facility unless a permit has been obtained from the department. Section 6018.302(b) makes it a crime to fail to control runoff and discharges of residual waste, or to operate facilities in a manner that adversely affects or endangers public health, safety and welfare or the environment. Section 6018.610(1) makes it a crime to dump or deposit solid waste onto the ground or into the waters of the Commonwealth without a proper permit. Section 6018.610(2) makes it a crime to construct, alter, operate or utilize a solid waste storage, treatment, processing or disposal facility without a permit from the department or in violation of the rules or regulations adopted under this act, or orders of the department or in violation or any term or condition of any permit issued by the department. Section 6018.610(4) makes it a crime to dispose of solid waste in any manner that adversely affects public health, safety and welfare. Finally, Section 6018.610(7) criminalizes refusing, hindering, obstructing, delaying or threatening any agent or employee of the department in the course of performance of any duty under this act, including, but not limited to, entry and inspection under any circumstances.

The Grand Jury also reviewed the various statutory provisions within the Clean Streams Law that are pertinent to the investigation. Section 691.301 makes it a crime to discharge industrial waste into the waters of the Commonwealth. Section 691.401 prohibits putting, placing, allowing or permitting to be discharged into any waters of the Commonwealth, any substance of any kind or character resulting in pollution. Section 691.611 makes it a crime fail to comply with any DEP rule, regulation or permit, to fail to comply with any order or permit or license of the department,

to violate any provisions of the Clean Streams Law to cause air or water pollution, or to hinder, obstruct, prevent or interfere with the department or its personnel in the performance of any duty.