ATTACHMENT A

Specific Factors Considered for Administrative Civil Liability
City Ventures Homebuilding, LLC
Fox Hollow, Santa Rosa, Sonoma County

This document provides a summary of factual and analytical evidence that support the Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order. The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) Prosecution Team alleges that City Ventures Homebuilding, LLC (City Ventures or Discharger) failed to comply with State Water Resources Control Board (State Water Board) Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit or Permit) at its Fox Hollow Site in Santa Rosa, Sonoma County. This failure to comply with the requirements in the Construction General Permit has caused discharges of construction activity related pollutants to waters of the state and United States. The Discharger is subject to administrative civil liability for the violations described below pursuant to California Water Code section 13385, subdivisions (a)(2) and (a)(5).

Contents

Discharger and Site Information

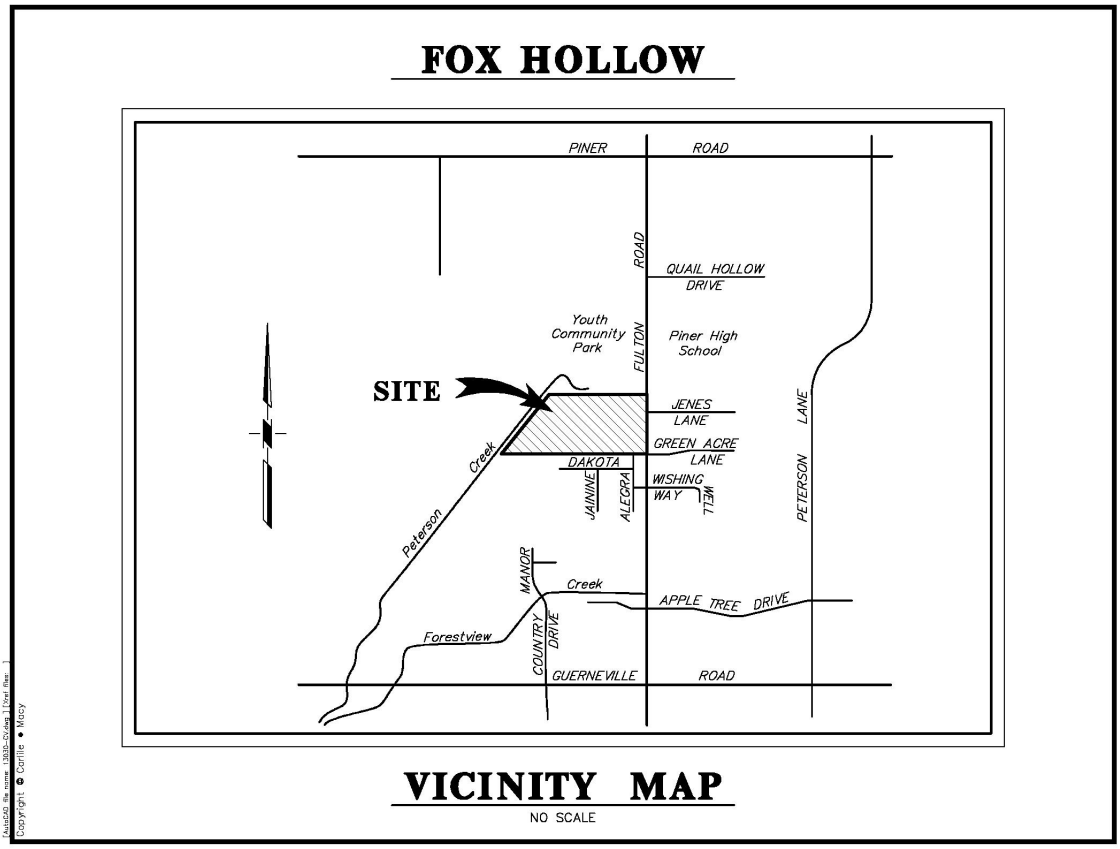
As described by the Discharger's enrollment documents submitted into the Stormwater Multiple Application and Report Tracking System (SMARTS),[1] the Fox Hollow Project is on a 22.32-acre parcel located at 1615 Fulton Road, Santa Rosa in Sonoma County (Site). The Site is bounded by Fulton Road to the east, Peterson Creek to the north, wetland preserve to the west, and an existing storm drain in a residential neighborhood.

The development includes the construction of 135 single-family homes, eight duplexes, associated infrastructure, access roads, and landscaping. Construction activities will disturb 20.55 acres of the 22.31 total Site. Grading started in August 2016, and construction is still active, with one last home to build and final punch list items to address. As part of the storm water conveyance design, the Discharger built two stormwater outfalls that discharge Site runoff directly into Peterson Creek. The wetlands on and off site also drain to Peterson Creek. A portion of the Site also drains to the south to an existing public storm drain located in Alegra Street, which discharges to Forestview Creek, a tributary to Peterson Creek.

Peterson Creek is tributary to Santa Rosa Creek, the Laguna de Santa Rosa, and to the Russian River,[2] which is a water of the state and United States and identified as impaired on the Clean Water Act section 303(d) list for sediment and temperature.[3]

[1] The Discharger's Notice of Intent and other enrollment documents were submitted by Matthew Jensen on August 1, 2016 to SMARTS, which can be accessed here: https://smarts.waterboards.ca.gov/.
[2] The City GIS data is available at: http://maps.srcity.org/Html5Viewer/Index.html?viewer=SewerWaterStorm.
[3] The list of Impaired Water Bodies is available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml.

Figure 1: Vicinity Map[4]



Regulatory Background

The Construction General Permit authorizes discharges of storm water associated with construction activity when a discharger complies with all applicable requirements, provisions, limitations and prohibitions. Pursuant to federal statutes and regulations, the Construction General Permit requires dischargers to implement the best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) to reduce or eliminate pollutants in storm water runoff. Under the Construction General Permit, dischargers must implement controls, structures, and management practices (a.k.a. Best Management Practices or BMPs) that achieve BAT for toxic and non-conventional pollutants, and BCT for conventional pollutants.[5]

On August 1, 2016, City Ventures filed a Notice of Intent with the State Water Board to enroll for coverage under the Construction General Permit as a Risk Level 2 Site.[6] City Ventures classified the site sediment risk as medium, and the receiving water risk as high, claiming the Site a Risk Level 2. On October 14, 2016, Regional Water Board staff first observed noncompliance with the Construction General Permit non-discharge

[4] This vicinity map was uploaded by the Discharger to SMARTS.
[5] Construction General Permit, Effluent Standards & Receiving Water Monitoring, section V.A.2.
[6] Notice of Intent and enrollment documents submitted on August 1, 2016.

requirements, and on November 3, 2016, staff observed the first known discharge of muddy construction-related storm water runoff entering Peterson Creek. In total, Regional Water Board staff inspected the Site twelve times over the course of the alleged violations from October 14, 2016 to February 26, 2019. Staff were joined by City of Santa Rosa and State Water Board office of Enforcement staff on several occasions.

The Regional Water Board has issued two Notices of Violation and Water Code 13267 Information Orders on March 7, 2017 (March 2017 NOV/13267 Order) and November 8, 2019 (Investigative Order R1-2019-0056).

The County of Sonoma settled a civil suit with the Discharger for failing to correct storm water controls and failing to cover disturbed soil prior to rain events in June 2020. The civil suit addressed municipal Code storm water, Fish and Game Code, and Business and Professions Code violations from 2017 to 2019. This Attachment A addresses violations prior to and after the violations that were the subject of the County's civil suit.[7]

Enforcement Policy

The State Water Resources Control Board's (State Water Board) *Water Quality Enforcement Policy* (Enforcement Policy) establishes a methodology for assessing administrative civil liability, including addressing the factors outlined in Water Code section 13385 subdivision (e).[8] The factors include "…the nature, circumstances, extent, and gravity of the violation or violations, whether the discharge is susceptible to cleanup or abatement, the degree of toxicity of the discharge, and, with respect to the violator, the ability to pay, the effect on its ability to continue its business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violation, and other matters that justice may require." Section 13385(e) also provides that, "[a]t a minimum, liability shall be assessed at a level that recovers the economic benefits, if any, derived from the acts that constitute the violation."

The Enforcement Policy was revised during the violations, and both the 2010 and 2017 Enforcement Policy versions are applied in this methodology.

[7] "City Ventures Agrees to Implement Training and Pay $199,000 to Resolve Pollution Case," County of Sonoma Press Release, June 17, 2020.

[8] The 2017 Enforcement Policy is available here: https://www.waterboards.ca.gov/water_issues/programs/enforcement/water_quality_enforcement.html.

Liability Methodology

Violation 1: Discharge Violation

Between October 14, 2016 and March 24, 2017, and on February 13 and 26, 2019, for 58 days, the Discharger violated Permit Discharge Prohibition III.B by discharging unauthorized construction-related storm water into Peterson Creek, a water of the United States.

Over the course of the 2016/2017 rainy season, the Discharger continuously failed to reduce or prevent the discharge of pollutants using BMPs, causing significant unauthorized storm water discharges from the Site. Staff observed that the Discharger's failure to have effective BMPs to meet best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) caused the Site to discharge stormwater with construction-related pollutants during storms.

The Discharger calculated the total sediment discharged from the Site to Peterson Creek between October 10, 2016 and April 14, 2017 to be 286 tons[9], which is approximately 215 cubic yards or 12 full tandem truck loads of soil. In addition, the Discharger applied bonded fiber matrix to the majority of the Site prior to a rain event. As a result, 6,030 pounds of bonded fiber matrix was discharged into Peterson Creek.

In determining the number of days of violation,[10] the Prosecution Team started with the days where discharges were observed. Knowing the Site conditions had not improved between inspections, the Prosecution Team added days when there were significant storms over 0.5 inches rain. The Complaint/Stipulated Order alleges 56 days consistent with the calculations provided by the Discharger.[11]

Two additional days of discharge occurred when the Discharger bypassed the active treatment system (ATS) on February 13 and 26, 2019. The ATS was bypassed because the system was undersized, described more in Violation 6.

Therefore, the Prosecution Team alleges a total of 58 days of unauthorized discharges to waters of the U.S.

[9] Letter from Charity Wager, City Ventures, to Shin-Roei Lee, Regional Water Board (March 31, 2017).
[10] Note that this analysis does not include a per-gallon liability due to the same items discussed in Other Factors as Justice May Require. According to Letter from Charity Wager, City Ventures, to Shin-Roei Lee, Regional Water Board (January 10, 2018) and supporting calculations signed and stamped by Peter M Crudo, PE., the Site discharged approximately 10,036,156 gallons of construction-related stormwater over the 12 qualifying rain events included in Table 1.
[11] Letter from Charity Wager, City Ventures, to Shin-Roei Lee, Regional Water Board (March 31, 2017).

Table 1- Storm Events Reported by Discharger[12]

Event Reference Number	**Storm Event Period**	**Days**	**Reported Approximate Rainfall** (inches)
1	October 14-16, 2016	3	1.3
2	October 28-30, 2016	3	4.25
3	November 19-20, 2016	2	2.5
4	November 25-27, 2016	3	0.5
5	December 7-9, 2016	3	1.25
6	December 14-16, 2016	3	5
7	December 23-24, 2016	2	0.625
8	January 2-13, 2017	12	4.875
9	January 17-24, 2017	8	4.125
10	February 1-10, 2017	10	9.25
11	February 15-20, 2017	6	5.125
12	March 24, 2017	1	1.875
Total		**56**	

[12] Letter from Charity Wager, City Ventures, to Shin-Roei Lee, Regional Water Board (January 10, 2018) and supporting calculations signed and stamped by Peter M Crudo, PE.

Per Day Liability Methodology for Violation 1

Per Day Liability	***= (Days)(Per Day Factor)(Statutory Max Per Day)***
	=(58 days)(0.31)($10,000 per day)
	=$179,800

Where:

Days = Days of Violation
= **58 days**

Per Day Factor is determined based on the application of the following factors to "Table 2- Per Day Factor for Discharge" = **0.31**

Potential for Harm = *Toxicity + Harm to Beneficial Uses + Cleanup*
= 3+3+1= **7**

Where:

Toxicity = Degree of toxicity of discharge =Above Moderate= 3
Harm to Beneficial Use = Moderate= 3
Cleanup = Susceptibility to cleanup or abatement= 1

Deviation from Requirement = Major

Statutory Max Per Day = $10,000 per day

Discussion of Factors for Per Day Liability for Violation 1

Degree of Toxicity of Discharge

The Enforcement Policy states that the degree of toxicity considers the physical, chemical, biological, and thermal characteristics of the discharge or material involved in the violation and the risk of damage the discharge could cause to the receptors or beneficial uses. Evaluating the discharged material's toxicity should account for all the characteristics of the material prior to discharge, including whether it is partially treated, diluted, concentrated, or a mixture of different constituents. Toxicity analysis should include assessment of both lethal and sublethal effects such as effects on growth and reproduction. This factor is focused on the nature and characteristics or toxicity of the material discharged in the context of potential impacts to beneficial uses more generally. A score between 0 and 4 is assigned based on a determination of the risk and threat of the discharged material.

The discharges from the Site consisted primarily of sediment-laden stormwater, but also exhibited extremely high pH levels, and potentially consisted of other pollutants such as petroleum hydrocarbons and heavy metals. Additionally, bonded fiber matrix discharged to receiving waters.

Toxicity of pH

The daily average pH value of 12.2 on January 8, 2018 is of particular concern because it is consistent with almost pure lime solution.[13] Lime is often used on construction sites to harden saturated soils and was used extensively at the Site.

As stated in the *Technical Memorandum-pH Requirements of Freshwater Aquatic Life (May 2004)*, on page 4:

> "Studies have shown that pH values of between 9 and 10 can result in partial mortality for bluegill sunfish (*Lepomis macrochirus*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), salmon, and perch. The majority of freshwater fishes and macroinvertebrates experience harmful effects (lethal or sublethal) at one or more life stages at pH values above 10" (Weibe 1931; AFS 1979; Alabaster and Lloyd 1980)."

Additionally, the document goes on to state on page 5 that:

> "The USEPA has concluded that a pH range of 6.5 to 9.0 provides adequate protection for the life of freshwater fish and bottom-dwelling macroinvertebrates. Outside this range, fish suffer adverse physiological

[13] National Lime Association, Lime Fact Sheet: Properties of Typical Commercial Lime Products, available at https://www.lime.org/documents/lime_basics/lime-physical-chemical.pdf.

> effects that increase in severity as the degree of deviation increases until lethal levels are reached (USEPA 1976, 1986)."[14]

Nature and Characteristics of Bonded Fiber Matrix

For the December 14-16, 2016 rain event, the Discharger had very recently applied bonded fiber matrix, which is a matrix of a continuous layer of elongated fiber strands held together by a water-resistant bonding agent. The bonded fiber matrix was applied to large portions of the Site in an attempt to stabilize large areas of disturbed soil that were otherwise unprotected. The Discharger estimated having applied 30,000 pounds of bonded fiber matrix,[15] 6,030 pounds of which was washed into Peterson Creek due to the incorrect application just prior to rain and the resulting runoff from the December 14-16, 2016 rain event. The large quantity of bonded fiber matrix that reached Peterson Creek threatened to elevate turbidity and impact the life cycle of aquatic species.

Toxicity of Sediment

In this matter, large volumes of sediment-laden stormwater were discharged over an extended period of time, to a sediment impaired receiving water system.

Sediment that is discharged into receiving waters is problematic in many ways. When suspended in the water column it causes elevated turbidity levels in the water column; clouding receiving waters and reducing the amount of sunlight reaching aquatic plants. Sediment can clog fish gills, reduce visibility making it difficult for fish to locate food, find mates, and seek cover and avoid predators.

Even short periods of elevated turbidity, or minimal increases to turbidity, can have significant impacts on aquatic species such as juvenile salmonids. Studies show that reactive distances, the area in which fish can detect and capture prey, changed significantly in rainbow trout from 80 percent to 45 percent respectively in 15 nephelometric turbidity units (NTU) and 30 NTU.[16]

As sediment settles out of the water column, it impairs aquatic life through deposition of fine grain particles into spawning, rearing, and interstitial niche habitats in a stream's substrate. The filling in of interstitial niches reduces habitat availability; reduced habitat availability in turn affects habitat complexity and biodiversity of species, which affects available food sources in terms of available grazing, shredding, and prey species types.[17] The accumulation of sediment in the substrate also affects permeability and can

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[14] Robertson-Brian, Inc., *Technical Memorandum: pH Requirements of Freshwater Aquatic Life* (May 2004), available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/bigbreak/dscbb_exh5.pdf.

[15] Letter from Charity Wagner, City of Santa Rosa, to Shin-Roei Lee (March 31, 2017).

[16] Barrett, J. C., Grossman, G. D., Rosenfeld, J., Turbidity Induced Changes in Reactive Distances of Rainbow Trout, Transactions of the American Fisheries Society, 121:437- 443, 1992.

[17] Bash, J., Berman, C., Bolton, S., Effects of Turbidity and Suspended Solids on Salmonids, Center of Streamside Studies, University of Washington, 22-23, 2001.

result in less oxygen available in the substrate to support aquatic flora and fauna. Sediment deposition may also reduce the storage capacity of the stream and lead to shallower stream channels, causing flooding, stream bank scouring, and increases in stream temperature which in the short term can kill fish and other species and make the waterway unsuitable habitat to sensitive species in the long term. Sediment can also mobilize and transport other pollutants such as, nutrients, metals, and oils and grease, that can be toxic to aquatic organisms.[18]

Construction related pollutants pose an above moderate level of concern to ecosystem health exposure pathways because of the likelihood that the discharged material would harm aquatic life. **The Prosecution Team has assigned a Degree of Toxicity of Discharge score of 3, as stormwater with construction-related pollutants posed an above moderate risk or threat to potential receptors.**

Actual or Potential for Harm to Beneficial Uses

The Enforcement Policy states that evaluation of the actual or potential for harm to beneficial uses considers the harm to beneficial uses in the affected receiving water body that may result from exposure to the pollutants or contaminants in the discharge. The Regional Water Board may consider actual harm or potential harm to human health and/or beneficial uses. The score evaluates direct or indirect actual harm or potential for harm from the violation. The harm or potential harm to beneficial uses ranges between 0 and 5 based on a determination of whether the harm or potential for harm to beneficial uses is negligible (0), minor (1), below moderate (2), moderate (3), above moderate (4), or major (5). The Enforcement Policy defines moderate as impacts that are observed or reasonably expected potential impacts, but harm or potential harm to beneficial uses is moderate and likely to attenuate without appreciable medium or long term acute or chronic effects.

The Discharger's failure to implement effective and/or appropriate BMPs to achieve BAT/BCT resulted in significant sediment discharges to Peterson Creek. Peterson Creek belongs to the Santa Rosa Hydrologic Subarea of the Middle Russian River Hydrologic Area. Existing and potential beneficial uses of the Santa Rosa Hydrologic Area are identified in the Basin Plan and include municipal, agriculture, industrial service, industrial process, groundwater recharge, navigation, hydropower, water contact recreation, non-contact water recreation, commercial and sport fishing, warm and cold freshwater habitat, wildlife habitat, threatened species, aquatic organism migration, spawning and/or early development, shellfish harvesting, and aquaculture.

Storm water runoff can suspend and mobilize debris, chemicals, sediment and other pollutants generated from construction-related activities that may enter Peterson Creek. Without adequate storm water BMPs to reduce erosion, trap sediment, and maximize infiltration, storm water runoff is generally discharged uninhibited into water bodies. Construction General Permit Finding 11 explains that excess sediment can cloud the water, which reduces the amount of sunlight reaching aquatic plants, clog fish gills,

[18] Construction General Permit, Fact Sheet, Page 22.

smother aquatic habitat and spawning areas, and impede navigation in our waterways. Sediment also transports other pollutants such as nutrients, metals, and oils and greases.

Elevated sediment loading from storm water runoff into the receiving water causes elevated turbidity levels. Turbidity is a measure of the cloudiness of water, resulting in the reduction of the amount of light able to travel through the water column. Turbidity can be caused by suspended soils or matter, such as fine sediment. Based on available sampling results provided by the Discharger (Table 2), discharges of sediment-laden storm water caused and/or contributed to elevated turbidity measurements in the discharge from the Project Site to Peterson Creek.

Elevated turbidity levels can create a substantial threat and/or potential threat to beneficial uses while likely causing temporary, if not permanent, impacts to aquatic life.[19] The Construction General Permit imposes a Numeric Action Level for turbidity at 250 Nephelometric Turbidity Unit (NTU) for storm event daily average. Discharges above a Numeric Action Level is a warning to evaluate if BMPs are effective or require corrective actions. If turbidity is above 250 NTU, a discharger is required to take actions including a site and run-on evaluation and to immediately implement corrective actions if needed.[20]

The turbidity results for what the Discharger sampled are summarized below in Table 2. All but one turbidity daily average result reported for over a year of data collected between Jan 3, 2017 and January 24, 2018 exceeded the Numeric Action Level of 250 NTU, with the highest reported values occurring at the end of this period. These data indicate that necessary corrective actions were not taken or were ineffective or insufficient to control the discharge.

As seen in Table 2, the reported value of 1,000 NTU is likely higher as 1,000 NTU is the maximum reading achievable by most handheld turbidity meters. Field notes by the Discharger's Site staff indicate that the range of the meter was exceeded on January 8, 2018 and January 24, 2018.[21]

The values reported in Table 2 are daily averages reported by the Discharger. However, further review of the supporting documentation demonstrates that in many cases those daily averages incorrectly include both run-on to the Site and receiving water samples in Peterson Creek, collected from both upstream and downstream of the Site discharge. These errors in the calculations would generally result in daily averages that are less than the correctly calculated averages as the turbidity and pH of the run-on and receiving water was less than the runoff from the Site. It is reasonable to conclude those daily averages were higher than reported.

[19] Construction General Permit Section I. Findings discuss impacts related to turbidity.
[20] Construction General Permit Section V.B.
[21] The 2016/2017 and 2017/2018 Annual Reports are available on SMARTS.

Santa Rosa Hydrologic Subarea is a Clean Water Act section 303(d)-listed water body for sediment/siltation impairment. Sediment-laden stormwater was discharged from the Site over multiple days during the storm events into a sediment-impaired system. Discharges from the Site resulted in deposits of fine sediment in stream channels, impacting habitat while deposited, and remaining available to become resuspended and transported farther downstream with each high flow event. Because the water system that the turbid storm water discharged into is already sediment-impaired, it is reasonable to expect potential impacts to beneficial uses from the discharges, but given the relatively short duration of the discharges (the longest storm event was 12 days) the harm was likely moderate and likely to attenuate without appreciable medium or long term acute or chronic effects.

Additionally, the large quantity of bonded fiber matrix (estimated at 6,030 pounds), like deposited sediment, causes elevated turbidity, settles into spawning, rearing, and interstitial niche habitats in a stream's substrate and impacts the life cycle of fish and other aquatic species. As the fiber component of bonded fiber matrix degrades within the receiving water it also results in the reduction of available dissolved oxygen.

For this violation, the *Actual or Potential Harm to Beneficial Uses* was determined to be Moderate (3).

Susceptibility to Cleanup or Abatement

As described in the Enforcement Policy, a score of 1 should be assigned when a discharger cleans up 50 percent or less of the discharge in a reasonable amount of time. In this case, the Prosecution Team assigned a factor of 1 because the construction related discharge from the Site discharged into Peterson Creek and/or the municipal storm drain system located to the South of the Site in Alegra Street, and the discharge then dispersed in the watershed. Therefore, cleanup or abatement of the sediment was not possible.

Deviation from Requirement

The requirement under Construction General Permit Discharge Prohibition III.A is that any discharges of stormwater that are not specifically authorized are prohibited.

The Permit authorizes discharges only when all other provisions of the Permit are properly implemented at an industrial facility. The Discharger failed to meet the BMP requirements of the Permit, as alleged in Violations 2 through 5, during the entire time period alleged for Violation 1. Therefore, the ongoing discharge of polluted stormwater from the Facility was not authorized by the Permit.

The deviation from requirements is scored as major since Discharge Prohibition III.B of the Construction General Permit was completely undermined or rendered ineffective in its essential function. The Discharger failed to implement minimum sediment and erosion control BMPs to effectively control the discharges of pollutants related to construction activities for over a year without necessary corrective action being taken to reduce the levels of turbidity and pH such that they were below the Numeric Action

Levels. These discharges resulted in 58 days of violation and over 10 million gallons of unauthorized storm water discharge from the Site into Peterson Creek.

The minimum required BMPs work in a collective manner to stabilize a site. Since the Discharger delayed installing all BMPs and continued to not install all the required BMPs for the series of storm events noted above, stormwater flows were left uncontrolled. Therefore, the Discharger's actions allowed erosion and ultimately the transport of sediment and BMP material, like the bonded fiber matrix, to flow from the recently graded areas into Peterson Creek.

The relevant discharge prohibition was rendered ineffective in its essential function because the Facility failed to implement adequate and effective minimum and advance BMPs.

The Deviation from Requirement was determined by the Prosecution Team to be Major.

Adjusted Liability Calculations for Violation 1

Violation 7 Adjusted Liability = (Initial Liability)(Culpability)(History)(Cleanup & Cooperation)

= ($179,800)(1.2)(1.0)(1.2)

= $258,912

Where:

Initial Liability = $179,800
Culpability = 1.2
History = 1.0
Cleanup and Cooperation = 1.2

Discussion of Violator's Conduct Factors for Violation 1

Degree of Culpability

The Enforcement Policy directs that in order to determine the Discharger's culpability, the first step is to identify any performance standards (or, in their absence, prevailing industry practices) in the context of the violation. The test for whether a discharger is negligent is what a reasonable and prudent person would have done or not done under similar circumstances. Adjustment should result in a multiplier between 0.75 and 1.5, with a higher multiplier for intentional misconduct and gross negligence, and a lower multiplier for more simple negligence. A neutral assessment of 1.0 should be used when a discharger is determined to have acted as a reasonable and prudent person would have. A multiplier of less than 1.0 should only be used when a discharger demonstrates that it has exceeded the standard of care expected of a reasonably prudent person to prevent the violation.

Regional Board and City of Santa Rosa staff repeatedly notified City Ventures of the lack of adequate and effective erosion and sediment control practices during Site visits, through email and inspection reports prior to and during the period of October 2016 to March 2017. These notifications included Santa Rosa Police Environmental Crimes Detective presence on the Site on multiple occasions, as well as the Site being placed under official Stop Work conditions on multiple occasions due to inadequate storm water BMPs and resulting discharges.

Regional and State Board staff (collectively, Board staff) started inspections in October 2016, and continuously found deficiencies in the Discharger's storm water management and deployment of BMPs through March 2019. The Discharger was notified several times via email of Site deficiencies, and Regional Board staff issued the March 2017 NOV/13267 Order, specifically addressing Construction General Permit Attachment D requirements for storm water BMPs. Even after the March 2017 Notice of Violation, Board staff observed additional sediment and erosion control deficiencies that could contribute to prohibited discharges. In total, Board staff visited the Site seven times within the period of time pertaining to Violation 1 and City of Santa Rosa staff inspected the Site at least 9 times in 2016/2017.

A reasonable and prudent person would have implemented more BMPs and ensured they were functioning throughout the Site, especially after being notified on multiple occasions by staff that the BMPs on the Site were neither effective nor adequate. After the first discharge event, a reasonable and prudent person would have inspected the Site and made adjustments in the BMPs to prevent a future discharge, however numerous subsequent discharges occurred during the period between October 2016 to March 2017.

Not only was the Discharger receiving warnings from Board staff and City staff, the Discharger also ignored the water quality samples showing exceedances of NAL, and the written need for corrections in Rain Event Action Plans prepared by their Qualified

SWPPP Practitioner (QSP).[22] The sampling results the Discharger took from January 2017 through January 2018 that indicated turbidity over 250 NTU and elevated pH clearly should have informed the Discharger that the BMPs needed improvement and that the current BMP implementation was insufficient. Over a year later, in 2018, the Discharger did eventually install the ATS recommended in their SWPPP, but they neglected to install the system in accordance with the required sizing requirements, despite notifications of inadequate sizing from State Water Board and City of Santa Rosa staff. Their neglect to size the system appropriately resulted in uncontrolled erosion on sedimentation basin levees and discharges into Peterson Creek.

The Discharger's conduct in this regard appears to be grossly negligent as it demonstrates that the Discharger repeatedly failed to take reasonable and prudent steps to effectively implement BMPs and to reduce impacts to water quality in spite of the continued communications from Board staff about BMP inadequacies and the Discharger's own self-reported sampling results indicating elevated turbidity and pH levels.

Therefore, the Prosecution Team has assigned Degree of Culpability Factor of 1.2.

History of Violations

According to the Enforcement Policy, where the discharger has no prior history of violations, this factor should be neutral, or 1.0.

Therefore, **a factor of 1.0 History of Violations is appropriate.**

Cleanup and Cooperation

As stated in the Enforcement Policy, cleanup and cooperation takes into account voluntary efforts to cleanup and/or to cooperate with regulatory authorities in returning to compliance after the violation. Any adjustment results in a multiplier between 0.75 to 1.5, using the lower multiplier where there is exceptional cleanup and cooperation compared to what can reasonably be expected, and higher multiplier where there is not. A reasonable and prudent response to a discharge violation or timely response to a Water Board order should receive a neutral adjustment as it is assumed a reasonable amount of cooperation is the warranted baseline.

Although BMP deficiencies and the complete lack of the minimum required BMPs were documented by Board and City staff from October 2016 onward, the Discharger did make improvements over time. Most notably, the Discharger installed an Active Treatment System (ATS) in 2018 to treat storm water runoff prior to discharge into Peterson Creek. The Discharger initially ignored or did not adequately respond Board

[22] The Annual Report is available on SMARTS: https://smarts.waterboards.ca.gov/.

and City staff notices of violations. The Discharger's response and actions to correct the violations became more reasonable over time, but due to delay in installation, as well as the under sizing of the ATS, did not go above and beyond what would be expected to comply with the Construction General Permit. Additionally, staff is not aware that the Discharger undertook any cleanup that would be considered exceptional in response to these violations.

Therefore, a Cleanup and Cooperation Factor of 1.2 has been assigned.

By applying the factors to Violation 1, the final adjusted liability is $258,919.

Statutory Maximum Liability for Violation 1

Violation 1 Statutory Maximum Liability = (Day)(Statutory Max Per Day)

= (58 days)($10,000 per day)

= $580,000

Statutory maximum liability for gallons discharged are not included.

Final Liability Calculations for Violation 1

Final Liability for Violation 1 = Adjusted Penalty

unless it exceeds the Statutory Maximum Penalty

= $258,912 Adjusted Liability < $580,000 Statutory Maximum Penalty

= $258,912 Adjusted Liability

Violations 2-7: Non-Discharge Violations

Method of Assessing Non-Discharge Violations

The non-discharge violations pertain to the missing or ineffective BMPs at the Site as documented in inspections, Rain Event Action Plans (REAP), and Annual Reports uploaded on SMARTs[23]. A storm water control system is failing if BAT and BTC requirements are not met. How the storm water control system is functioning is determined by direct observation and sampling data. In this matter, the discharges continued to greatly exceed the Numeric Action Levels identified in the Permit.[24]

The sampling results reported by the Discharger in their Annual Reports show that the NAL for turbidity and/or pH was exceeded on 18 sampling events between October 14, 2016 and February 28, 2018 out of a total of 25 events sampled. The turbidity measurements of the discharged stormwater were considerably higher than the numeric action level (NAL) in all but two samples. Five samples were outside of the allowable pH range of 6.5 – 8.5. The self-reported data demonstrate that the construction-related discharges were consistently above corresponding NALs.[25] This pattern of repeated and prolonged exceedance indicates that any corrective actions taken onsite over this period, such as the application of straw or inlet protection, were ineffective in controlling turbidity and pH in stormwater discharges. The Discharger was aware of the poor performance of their BMPs since they self-reported the data, and they failed to improve their controls, structures, and management practices since they were not able to comply with numeric action limitations. An additional 27 days where over 0.5 inches of precipitation was recorded by NOAA within the violation period were not sampled by the Discharger.

Table 2, below, summarizes the Discharger's self-reported sampling results found in their 2016/2017 and 2017/2018 annual reports showing high turbidity and pH from the Site.[26] Note that although the Permit requires that dischargers conduct sampling and provide sampling results in their annual reports for all qualifying storm events, City Ventures failed to provide sampling data for many of the qualifying storm events.

[23] The Permit is available on SMARTS: https://smarts.waterboards.ca.gov/.
[24] Construction General Permit Section V.B. Numeric Action Levels.
[25] Construction General Permit, Attachment D Risk Level 2 Requirements, section A.2.
[26] The 2016/2017 and 2017/2018 Annual Report are available on SMARTS. Unless otherwise noted, all inspection reports and relevant documents are available in the SMARTS database.

Table 2- *Discharger Reported Sampling Results:*

Date	Rainfall Total (inches)[27]	Daily Average Effluent Turbidity (NTU)[28]	Met NAL of 250 NTU?	Daily Average Effluent pH[29]	Met NAL of 6.5-8.5 pH?
October 14, 2016	0.54”	-	No sample collected	-	No sample collected
October 15, 2016	0.66”	-	No sample collected	-	No sample collected
October 24, 2016	1.76”	-	No sample collected	-	No sample collected
October 25, 2016	0.85”	-	No sample collected	-	No sample collected
October 28, 2016	0.99”	-	No sample collected	-	No sample collected
October 30, 2016	1.21”	-	No sample collected	-	No sample collected
November 19, 2016	2.63”	-	No sample collected	-	No sample collected
November 26, 2016	0.54”	-	No sample collected	-	No sample collected
December 7, 2016	0.66”	-	No sample collected	-	No sample collected
December 8, 2016	0.57”	-	No sample collected	-	No sample collected
December 10, 2016	0.64”	-	No sample collected	-	No sample collected
December 23, 2016	0.85”	220.7	Yes	6.56	Yes
January 3, 2017	2.05”	**350.1**	**No**	**8.6**	**No**
January 4, 2017	0.22”	156.3	Yes	**8.57**	**No**
January 7, 2017	1.80”	-	No sample collected		No sample collected
January 8, 2017	3.58”	-	No sample collected		No sample collected
January 9, 2017	1.22”	**288.3**	**No**	**8.59**	**No**
January 10, 2017	2.27”	**557**	**No**	**9.44**	**No**
January 11, 2017	0.07”	**286.6**	**No**	7.77	Yes
January 12, 2017	0.37”	**494.3**	**No**	7.86	Yes

[27] NOAA Rainfall Record for Santa Rosa Airport, available at https://www.ncdc.noaa.gov/cdo-web/datatools/lcd.
[28] The daily average effluent turbidity data from the 2016/2017 and 2017/2018 Annual Reports are available on SMARTS.
[29] The average daily effluent pH data from the 2016/2017 and 2017/2018 Annual Reports are available on SMARTS.

January 13, 2017	0.00”	**334**	**No**	7.81	Yes
January 18, 2017	3.10”	**619**	**No**	8.1	Yes
January 19, 2017	0.34”	**331.1**	**No**	7.77	Yes
January 20, 2017	1.44”	**450.5**	**No**	7.8	Yes
January 21, 2017	0.73”	-	No sample collected	-	No sample collected
January 22, 2017	1.58”	-	No sample collected	-	No sample collected
January 23, 2017	0.90”	199.8	Yes	8.01	Yes
January 24, 2017	0.01”	**250.7**	**No**	8.04	Yes
February 2, 2017	1.71”	**353.1**	**No**	8.22	Yes
February 3, 2017	0.84”	**303.3**	**No**	8.14	Yes
February 5, 2017	0.56”	-	No sample collected	-	No sample collected
February 6, 2017	1.44”	242.8	Yes	7.68	Yes
February 7, 2017	1.60”	215.9	Yes	7.79	Yes
February 8, 2017	1.22”	**262.9**	**No**	7.78	Yes
February 9, 2017	1.74”	**526**	**No**	7.98	Yes
February 10, 2017	0.01”	161.8	Yes	7.6	Yes
February 16, 2017	0.84”	**378.8**	**No**	7.73	Yes
February 17, 2017	1.29”	213.2	Yes	7.99	Yes
February 19, 2017	1.06”	-	No sample collected	-	No sample collected
February 20, 2017	2.07”	-	No sample collected	-	No sample collected
February 21, 2017	0.14”	17.5	Yes	8	Yes
March 20, 2017	0.60”	-	No sample collected	-	No sample collected
March 24, 2017	1.29”	-	No sample collected	-	No sample collected
April 6, 2017	2.36”	-	No sample collected	-	No sample collected
April 12, 2017	0.57”	-	No sample collected	-	No sample collected
November 8, 2017	1.02”	-	No sample collected	-	No sample collected
November 13, 2017	0.85”	-	No sample collected	-	No sample collected
November 15, 2017	1.53”	-	No sample collected	-	No sample collected
November 26, 2017	0.96”	-	No sample collected	-	No sample collected
January 8, 2018	3.27”	**1,000**	**No**	**12.2**	**No**
January 24, 2018	0.72”	**1,000**	**No**	7	Yes

Approach to Days of Violation

Violation 2 occurred between November 3, 2016 and January 4, 2017. Violation 5 occurred between October 14, 2016 and November 3, 2016. Regional Water Board staff observed the same violations that correlate with the Discharger's self-reported sampling and days of discharge reported for the winter of 2016/2017. Since there were no noticeable improvements, intervening days[30] are alleged for these violations between inspections.

For Violations 3 and 6, the days of violation alleged correspond to specific inspections where Regional Board staff observed the violation. Two days of violation are alleged for Violation 7 on the two days the Discharger bypassed the active treatment system (ATS). The ATS and the associated ponds in use failed to capture and treat storm water as required. Those two days are also alleged for Violation 4, as well as two additional days when discharge from the ponds was observed by Regional Board staff on December 15 and December 23, 2016. See Table 3, below, depicting the days on which violations were observed.

Table 3- Days of Inspection by Board Staff

	Violation 2	**Violation 3**	**Violation 4**	**Violation 5**	**Violation 6**	**Violation 7**
Dates of Inspection	Attachment E, Section D.2	Attachment E, Section E.1	Attachment E, Section E.2	Attachment E, Section E.3	Attachment E, Section F	Attachment F, Section C.6.
10/14/2016		X		X		
11/03/2016	X	X		X	X	
11/20/2016	X	X			X	
12/1/2016	X					
12/15/2016	X	X	X		X	
12/20/2016	X	X				
12/23/2016	X	X	X		X	
01/04/2017	X					
03/1/2018		X				
09/26/2018						
02/13/2019[31]			X			X
02/26/2019[29]			X			X
Total Days of Violation	**63** (intervening)	**7** (individual)	**4** (individual)	**21** (intervening)	**4** (individual)	**2** (individual)

[30] The intervening days of violation between November 3, 2016 and January 4, 2017 were determined using an online date calculator, available here https://calculator-online.net/date-calculator/.
[31] A memo from Regional Water Board staff summarizes the event and is attached to a February 26, 2019 Inspection in SMARTS.

Summary of Non-Discharge Violations

Violation 2 – Lack of Effective Soil Cover

From November 3, 2016 through January 4, 2017, the Discharger violated Permit Attachment D, Section D.2., by failing to provide effective soil cover for inactive areas and all finished slopes, open space, utility backfill, and completed lots on the Site for 63 days.

Permit Attachment D, Section D.2. requires dischargers to implement erosion control BMPs to ensure that areas that are not in active construction are protected from stormwater to prevent the mixing of sediment into runoff. Erosion control BMPs for inactive areas include hydromulch or hydroseed, straw, geotextiles, plastic sheeting, or tarps.

Over the course of six inspections, the Discharger continued to fail to have erosion controls installed and functioning. On November 3, 2016, staff observed nearly the entire 20 acres had been disturbed (i.e., graded), with deep mud across the Site up to the Project boundary, and almost no sign of any effective soil cover BMPs. Staff observed puddles of storm water in tire tracks and low-lying areas, as well as rills and other evidence of erosion. On November 20, December 15, December 20, December 23, 2016 and January 4, 2017, staff observed the same nearly 20 acres were still disturbed/graded with deep mud across the Site up to the Project boundary, and almost no sign of any effective soil cover.

On December 15, 2016, inspection staff saw a small Caterpillar front end loader abandoned in deep mud, apparently stuck. On December 20, 2016, the Site was beginning to dry, but there were still large puddles of storm water and long deep rills across the Site.

On December 23, 2016, staff observed a thin green residue of bonded fiber matrix on some of the graded roadway. The bonded fiber matrix was sparse and patchy; the soil appeared to be too saturated for proper application. The majority of the material appeared to have been carried away by runoff from the Site. On January 4, 2017, staff saw the thin green residue of bonded fiber matrix again but on future home sites. The bonded fiber matrix was sparse, and very thinly applied.

In both instances, the Discharger completed applying soil cover (i.e., bonded fiber matrix) immediately prior to significant rain events, reducing its effectiveness. The bonded fiber matrix instead became a pollutant source as approximately 6,030 pounds of this material was washed into Peterson Creek.

On January 4, 2017, the Site looked the same as November 3, 2016, in that nearly the entire 20 acres had deep mud across the Site up to the project boundary, and almost no sign of any effective erosion controls. Those observed were either much too sparse to

be effective, overwhelmed, or damaged. There was bonded fiber matrix residue on some of the future home sites, but sparse and very thinly applied. Staff again observed puddles of stormwater in tire tracks and low-lying areas along with rills and evidence of erosion, fresh tire tracks, and uncovered soil stockpiles.

Violation 3 – Perimeter Controls

Between October 14, 2016 and December 23, 2016, the Discharger violated Permit Attachment D, Section E.1. by failing to establish and maintain effective perimeter controls around the Site and failing to stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the Site for 7 days.

Sediment control BMPs used to comply with these requirements include stabilized construction entrances and exits, tire wash stations, and perimeter control BMPs such as silt fence or wattles.

Over the course of five inspections, Regional Water Board staff observed the Discharger's continual failure to have effective perimeter controls and to stabilize entrances and exits.

a. On October 14, 2016, staff observed graded roads with no gravel or other material to stabilize the soil and acres of disturbed soil with no erosion controls ready to be deployed.

b. On November 3, 2016, staff observed sediment-laden storm water and mud beyond the perimeter control silt fence, and ponding in the wetland preserve adjacent to the Site, which is sensitive habitat that is required to be avoided the issued 401 Certification.

c. On November 20, 2016, staff observed sediment-laden storm water discharging through the culverts from the Site, and entering Peterson Creek, creating an obvious sediment plume within the creek.

d. On December 15, 20 and 23, 2016, staff observed multiple locations where highly turbid sediment-laden runoff ponded behind the silt fences used along the Site perimeter, the silt fence was overwhelmed, damaged, and ineffective, and the runoff was sheet flowing down the bank and into Peterson Creek. No improvements were observed between these inspections.

Violation 4 – Sediment Basins

On December 15, and 23, 2016, and again on February 13 and 26, 2019, the Discharger violated Permit Attachment D, Section E.2. by failing to design onsite ponds used as sediment basins in accordance with California Stormwater Quality Association's (CASQA's) Construction BMP Guidance Handbook sediment basin design guidance. This violation occurred for a total of 4 days.

The Discharger's site design includes three bioretention ponds referred to as raingardens. These features were sized and designed for Permit post-construction Low Impact Development (LID) requirements. The raingardens are to remove typical pollutants that come off the roads and rooftops for frequent low intensity storm events. The Discharger utilized the three raingardens as sediment basins though they were not designed to be used as sediment basins.

Per Best Management Practice code SE-2 in the CASQA Manual for sediment Basins, sediment retention basins must have an open channel high flow spillway. These raingarden basins did not have an open channel high flow spillway.

On both December 15 and 23, 2016, uncontrolled discharge was observed by Board staff overtopping the raingardens and flowing down the banks of Peterson Creek.

On February 13 and 26, 2019, due to heavy rain, the pump system for the onsite ATS reached maximum capacity.[32] The Discharger plugged the outlet pipe spillway to create storm water impoundment within the raingardens. Once the diversion pump capacity was exceeded and the raingardens filled, there was no stable conveyance system for outflow. By failing to provide an overflow safety feature on the raingardens when they were repurposed to capture construction runoff, uncontrolled overflow breached the top of the raingarden above the outfall pipe, the top of the levee and creek bank, and discharged. The Discharger caused erosion from the damage along the top of the levee between the raingarden and creek, the creek bank failure, and the uncontrolled discharge of Site runoff into Peterson Creek.

While these raingardens were not designed as sediment basins, once they were brought into use in conjunction with the ATS system they effectively became sediment basins needing to meet design standards required in the General Construction Permit.

Violation 5 – Erosion and Sediment Controls

Between October 14, 2016 and November 3, 2016, the Discharger violated Permit Attachment D, Section E.3 by failing to implement erosion control BMPs (runoff control and soil stabilization) in conjunction with sediment control BMPs for areas under active construction, for 21 days.

During inspections and site visits, the Discharger failed to install and maintain both BMPs that prevent sediment from entering runoff, and as BMPs to prevent sediment from discharging. Each site visit, staff observed nearly the entire 20 acres on the Site

[32] "Fox Hollow Incident Report 2-13-19" was uploaded as an attachment on February 21, 2019 (Attachment ID 2348951) is available on SMARTS by searching the file title for "Fox Hollow Incident Report 2-13-19."

had been disturbed (i.e., graded) without nearly any erosion and sediment controls, often with deep mud across the Site up to its boundary.

On October 14, 2016, staff observed actively working construction equipment with almost a complete lack of erosion or sediment controls. Those few BMPs observed were insufficient or ineffective because they were scarce or not effective for the Site's operation. For example, construction vehicles were not traveling on the gravel-stabilized access roads, but rather were being routed across unprotected soil.

Regional Water Board staff viewed the Site on October 28, 2016. The Site was still almost void of BMPs. Nearly the entire Site was graded, with tire tracks throughout the unprotected exposed soil.

On November 3, 2016, staff observed that from the Site boundary, tire tracks in the mud, puddles of stormwater in the tire tracks and low-lying areas, and rills and other evidence of erosion.

Violations 6 – Run-On and Run Off

As observed by Regional Board staff on November 3, November 20, December 15, and December 23, 2016, the Discharger violated Permit Attachment D, Section F by failing to effectively manage all run-on, all runoff within the Site, and all runoff that discharged off the Site. Run-on from off-site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit.

Over the course of four inspections, Regional Water Board staff observed the Discharger's failure to comply with the requirements of the Permit Attachment D, Section F. to effectively manage all run-on, all runoff within the Site, and all runoff that discharged off the Site.

On November 3, 2016, Staff observed runoff and mud were discharging off the Site into the wetlands adjacent to the south due to failed perimeter control BMPs. On November 20, 2016, a large amount of turbid runoff discharged from the Site into the adjacent wetlands west of the Site. Additionally, Staff observed highly turbid storm water runoff discharging at the most westerly outfall at the west side of the Site into Peterson Creek.

On December 15, 2016, large amounts of highly turbid runoff breached ineffective parameter control BMPs. The turbid runoff discharged uncontrolled from the northern Project boundary of the Site, down the bank of Peterson Creek and into wetlands adjacent to the Site. Staff saw similar discharges on December 23, 2016, and also highly turbid storm water runoff discharging through the Project outfalls into Peterson Creek.

Violation 7 – Active Treatment System

On February 13 and 26, 2019, the Discharger violated Attachment F, Section C.6 by failing to install an ATS that was designed to capture and treat (within a 72-hour period) a volume equivalent to the runoff from a 10-year, 24-hour storm event using a watershed coefficient of 1.0.

As described in Violation 3, above, the Discharger installed an ATS as a BMP on February 28, 2018 and used the three raingardens as sediment basins. They became part of the ATS installation and were the only storage utilized by that system.

The ATS was not capable of treating the derived storm water volumes for events less than the required 10-year, 24-hour design storm criteria on February 13 and 26, 2019. The Discharger's consultant certified that the ATS pumps reached capacity on February 13, 2019 and that stormwater flows breached the repurposed raingardens. The uncontrolled overflow breached and eroded the top of the raingarden, the top of the levee, creek bank, and discharged into the adjacent Peterson Creek. On February 26, 2019, the ATS pumps reached capacity again, and the Discharger bypassed the ATS entirely with pumps, directly discharging water from the sedimentation basins into Peterson Creek.

The ATS treatment design is not in dispute. The ATS Design Plan submitted by the Discharger dated February 16, 2018 specified that the 10-year, 24-hour design storm was 5.24 inches. According to the National Oceanic Atmospheric Administration's (NOAA) local climatological data for Santa Rosa, California, the rainfall produced by the rain events on both February 13 and 26, 2019 was less than the design requirement specified in Attachment F, Section C.6.[33] Based on NOAA rainfall records, a 10-year, 24-hour storm would produce approximately 5.24 inches of precipitation.[34]

The issue is that the system was not designed to *capture* that amount of stormwater. The system was undersized to capture and treat 5.24 inches of precipitation. On February 13 and February 26, 2019, the Site received 3.86 inches and 4.64 inches of precipitation respectively, much less than the 5.24 inches it was designed to treat. The Site discharged stormwater into the creek because the ATS could not capture and treat the volume within 72-hours. Therefore, the fact that the ATS system had inadequate capacity and discharged on both of those dates demonstrates that the system did not meet the design sizing requirements of the Construction General Permit.

[33] Rainfall and other climatological data can be accessed on the NOAA website: https://www.ncdc.noaa.gov/cdo-web/datasets/LCD/stations/WBAN:23213/detail.
[34] See NOAA's Atlas 14 precipitation frequency estimates here: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html.

Discussion of Factors for Non-Discharge Violations 2-7

Potential for Harm

Per the Enforcement Policy, an assignment of Moderate for Potential for Harm is appropriate when the characteristics of the violation have substantially impaired the Water Boards' ability to perform their statutory and regulatory functions, present a substantial threat to beneficial uses, and/or the circumstances of the violation indicate a substantial potential for harm.

Failing to have functioning BMPs as alleged in Violations 2 through 7 caused or threatened to cause stormwater to discharge from the Site that was contaminated with construction-related materials, most notably, sediment throughout the rainy season, and bonded fiber matrix when applied. Sediment that is discharged into receiving waters is problematic in many ways. When suspended in the water column it causes elevated turbidity levels in the water column, clouding receiving waters and reducing the amount of sunlight reaching aquatic plants. Sediment can clog fish gills, reduce visibility making it difficult for fish to locate food, find mates, and seek cover and avoid predators.

Even short periods of elevated turbidity, or minimal increases to turbidity, can have significant impacts on aquatic species such as juvenile salmonids. Studies show that reactive distances, the area in which fish can detect and capture prey, changed significantly in rainbow trout from 80 percent to 45 percent respectively in 15 nephelometric turbidity units (NTU) and 30 NTU.[35]

As sediment settles out of the water column, it impairs aquatic life through deposition of fine grain particles into spawning, rearing, and interstitial niche habitats in a stream's substrate. The filling in of interstitial niches reduces habitat availability; reduced habitat availability in turn affects habitat complexity and biodiversity of species, which affects available food sources in terms of available grazing, shredding, and prey species types.[36] The accumulation of sediment in the substrate also affects permeability and can result in less oxygen available in the substrate to support aquatic flora and fauna. Sediment deposition may also reduce the storage capacity of the stream and lead to shallower stream channels, causing flooding, stream bank scouring, and increases in stream temperature which in the short term can kill fish and other species and make the waterway unsuitable habitat to sensitive species in the long term.

Sediment also transports other pollutants such as nutrients, metals, and oils and greases.[37]

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[35] Barrett, J. C., Grossman, G. D., Rosenfeld, J., Turbidity Induced Changes in Reactive Distances of Rainbow Trout, Transactions of the American Fisheries Society, 121:437- 443, 1992.
[36] Bash, J., Berman, C., Bolton, S., Effects of Turbidity and Suspended Solids on Salmonids, Center of Streamside Studies, University of Washington, 22-23, 2001.
[37] Construction General Permit, Findings 1.A.11, Page 3.

As observed on December 23, 2016 and January 4, 2017, the bonded fiber matrix became a pollutant source as approximately 6,030 pounds of this material was washed into Peterson Creek[38]. The bonded fiber matrix, like deposited sediment, causes elevated turbidity, settles into spawning, rearing, and interstitial niche habitats in a stream's substrate and impacts the life cycle of fish and other aquatic species. As the fiber component of BMF degrades within the receiving water it also results in the reduction of available dissolved oxygen.

Potential receptors in the Santa Rosa Creek watershed and Peterson Creek include: anadromous fish (steelhead trout, Chinook and Coho salmon), aquatic insects, amphibians, plants, and domestic water users. The discharged sediment from the Site poses a moderate and direct threat to these potential receptors.

Missing and ineffective BMPs resulted in increases in sediment loading to Peterson Creek and caused substantial impacts to beneficial uses as described below. BAT and BCT were not achieved with substantially turbid water running off the Site.

Failure to properly implement and maintain sediment and erosion controls, perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits creates a moderate potential for harm because conditions are created where pollutants are likely to be discharged into waters of the United States. The Discharger's continued failure to implement these controls allowed sediment and bonded fiber matrix to be exposed to storm water and ultimately transported to and discharged into Peterson Creek.

The receiving water is listed on the Clean Water Act section 303(d) list as a sediment-impaired system[39] thus indicating that there is no assimilative capacity for the system to take on additional sediment without adversely impacting water quality. The discharge of sediment-laden water from the Site into Peterson Creek was a persistent condition that repeatedly caused impacted conditions over at least a year.

The failure to adequately implement and maintain BMPs poses a threat to the following beneficial uses for Peterson Creek:[40]

- Commercial and sport fishing (COMM);
- Warm freshwater habitat (WARM);
- Cold freshwater habitat (COLD);
- Wildlife habitat (WILD);
- Rare, threatened, or endangered species (RARE);
- Migration of aquatic organisms (MIGR); and,
- Spawning, reproduction, and/or early development (SPAWN).

[38] Letter from Charity Wager, City Ventures, to Shin-Roei Lee, Regional Water Board (March 31, 2017).
[39] The Russian River and its tributaries are listed as impaired for sediment under Clean Water Act Section 303(d) available online at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml.
[40] The Water Quality Control Plan for the North Coast Region (Basin Plan), pages 2-11.

Construction activity-related discharges from the Site resulted in significant deposits of fine sediment in the Peterson Creek stream channel, impacting habitat while deposited, and available to become resuspended and transported farther downstream with each subsequent high flow event. The Discharge calculated the total sediment discharged from the Site to Peterson Creek between October 10, 2016 and April 14, 2017 to be 286 tons[41], which is approximately 215 cubic yards or 12 full tandem truck loads of soil. In addition, the Discharger applied bonded fiber matrix to the majority of the Site prior to a rain event. As a result, 6,030 pounds of bonded fiber matrix was discharged into Peterson Creek.

Sediment discharges from the Site are reasonably expected to have a negative impact on the beneficial uses for the Santa Rosa Subarea and Peterson Creek, especially those related to aquatic beneficial uses which are present and include: cold freshwater habitat (COLD); warm freshwater habitat (Warm), rare, threatened, or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development (SPAWN).[42]

Missing and ineffective stormwater control BMPs resulted in increases in sediment loading to Peterson Creek and caused substantial impacts to beneficial uses. While impacts from the high turbidity to beneficial uses are reasonably expected, it is likely that the turbidity and sediment discharged from the Site into receiving waters attenuated without appreciable medium or long term acute or chronic effects because exceedances were limited to storm events and subsequent high flow events.

The Prosecution Team has assigned a Moderate potential for harm for Violations 2 through 7.

Deviation from Requirement

The following analysis is also applicable to Violations 2 through 7. The Enforcement Policy explains that a major deviation from harm for a non-discharge violation is when the requirement was rendered ineffective in its essential functions.

The Discharger's failure to properly implement and maintain sediment and erosion controls, perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits were either absent or ineffective in the winter of 2016/2017.

BMP requirements were phased in, but not in conjunction with the remaining requirements found in Attachment D, thus not allowing the minimum required BMPs to work in a collective manner to protect water quality. Application of soil cover (e.g. bonded fiber matrix) was completed just prior to significant rain events, reducing its effectiveness, and instead making it a pollutant source.

[41] Letter from Charity Wager, City Ventures, to Shin-Roei Lee, Regional Water Board (March 31, 2017).
[42] Basin Plan, pages 2-11.

The Discharger neglected to adhere to the ATS size requirements defined in Attachment F of the Construction General Permit. Deviation from this requirement caused erosion of the levee next to Peterson Creek, from uncontrolled discharges over sedimentation basin levees, because the ATS pumps and or storage capacity were never installed in accordance with the sizing requirements defined in Attachment F. In the winter of 2016/2017, the Site was mostly absent of all required erosion controls and lacked effective soil cover for inactive areas and finished slopes, open spaces, utility backfill, and completed lots. Almost the entire Site was mass graded, resulting in approximately 20 acres of disturbed soil, and left with little or no BMP protections.

Throughout the entire period of the alleged violations, Regional Water Board Staff observed that BMPs requirements were inadequate, ineffective, or absent thus rendering this requirement ineffective in its essential function. The Permit's BMP requirements were thus rendered ineffective in their essential function. Therefore, the Prosecution Team has determined that a **major deviation from requirement** is appropriate for Violations 2 – 7.

Per Day Liability Calculation for Non-Discharge Violations

Per Day Liability = (Days)(Per Day Factor)(Statutory Max Per Day)

Where:

Days = Days of Violation

Per Day Factor is determined based on the application of the following factors to "Table 3- Per Day Factor for Non-Discharge" = **0.55**

Where:

Potential for Harm = Moderate
Deviation from Requirement = Major

Statutory Max Per Day= $10,000 per day

Therefore:

Per Day Liability for Violation 2 =*(63 days)(0.55)($10,000 per day)=* ***$346,500***

Per Day Liability for Violation 3 = *(7 days)(0.55)($10,000 per day)=* ***$38,500***

Per Day Liability for Violation 4 = *(4 days)(0.55)($10,000 per day)=* ***$22,000***

Per Day Liability for Violation 5 = *(21 days)(0.55)($10,000 per day)=* ***$115,500***

Per Day Liability for Violation 6 = *(4 days)(0.55)($10,000 per day)=* ***$22,000***

Per Day Liability for Violation 7 = *(2 days)(0.55)($10,000 per day)=* ***$11,000***

Discussion of Violator's Conduct Factors for Violations 2 – 7

Degree of Culpability

The culpability factor compares a discharger's behavior to how a reasonable discharger would have been expected to act or what is the industry standard. A reasonable discharger would comply with the Construction General Permit by installing BMPs as required and planned in the SWPPP and would have continually improved upon its BMPs until any threaten discharge was abated.

The Discharger has been regulated under the Permit since 2015 and is expected to be familiar with its requirements including those related to BMPs. The Discharger prepared and submitted a Storm Water Pollution Prevention Plan (SWPPP) that establishes a plan for implementation and maintenance BMPs specific to the Site. The Discharger did not implement and maintain BMPs as specified in its SWPPP.

In this case, the Discharger had numerous notifications that the Site's storm water controls were lacking or failing, actually or potentially causing construction-related contaminants to discharge from the Site.

In addition to the Regional Board staff issuing 10 inspection reports detailing concerns with the Site discussed above, Regional Board and City of Santa Rosa staff repeatedly notified City Ventures of the lack of adequate and effective erosion and sediment control practices during Site visits and via email before, during, and after October 2016 to March 2017. A Santa Rosa Police Environmental Crimes Detective frequented the Site and the City issued two Stop Work orders[43]. The Regional Water Board issued a Notice of Violation and Water Code 13267 Information Order on March 7, 2017 (March 2017 NOV/13267 Order).

The Discharger itself reported water quality sampling results showing exceedances of NALs in their Annual Reports that indicated turbidity over 250 NTU and elevated pH as described in Table 2 above. These significant exceedances should have been a red flag to the Discharger that the BMPs needed improvement and implementation was insufficient. The Discharger was aware of the issues. Additionally, Rain Event Action Plans prepared by their Qualified SWPPP Practitioner (QSP) repeatedly reported the need for stormwater control corrections, including repairs needed, missing BMPs, and BMP failures.

The Discharger's conduct in this regard from October 2016 to February 2018 appears to be grossly negligent as it repeatedly failed to take reasonable and prudent steps to effectively implement BMPs.

[43] Stop Work notice issued by City of Santa Rosa on 11/22/2016 and 2/8/2017.

For Violation 7, the two days of violation in 2019 for failing to have a properly designed ATS was again not what is expected of a reasonable discharger. Installing the ATS was included in the SWPPP prior to the start of work at the Site but was not in place until 2019. The ATS was not capable of capturing and treating the storm water volumes faced on February 13, 2019. Months earlier on September 25, 2018, State Water Board and City of Santa Rosa staff told the Discharger's representatives on the Site that the ATS was clearly undersized. State Water Board staff sent a follow-up email to the Discharger and their ATS contractor on December 10, 2018 further detailing the design concerns.[44]

The Discharger's consultant certified that the ATS pumps reached capacity on February 13, 2019 and that storm water flows breached the levee to the raingardens being used as sediment basins, causing erosion and uncontrolled discharges into Peterson Creek. The Discharger did not improve the system before February 26, 2019 when the ATS pumps reached capacity again, and the Discharger bypassed the ATS entirely with pumps, directly discharging turbid water into Peterson Creek. A reasonable discharger would have installed the ATS as planned in its SWPPP and increased its capacity or prepared for its insufficiency to collect and treat the water before discharging, or to have prevented the discharge by other means.

The Discharger's overall BMP implementation and response to identified deficiencies falls well below what is expected of a reasonable and prudent discharger in a similar circumstance. Therefore, **a factor of 1.3 Degree of Culpability is appropriate.**

History of Violations

According to the Enforcement Policy, where the discharger has no prior history of violations, this factor should be neutral, or 1.0. Therefore, **a factor of 1.0 History of Violations is appropriate.**

Cleanup and Cooperation

This factor ranges from 0.75 to 1.5, with a lower multiplier where there is exceptional cleanup and cooperation compared to what can reasonably be expected, and a higher multiplier where there is not.

In response to Violations 2, 3, 5, and 6, the Discharger did eventually implement additional sediment and erosion control measures such as silt fence, straw, rock, and the covering of some stockpiles. In response to Violation 7, the Discharger also eventually installed the ATS to treat storm water runoff prior to discharge in Peterson Creek[45]. In response to Violation 4, the Discharger did not implement corrective actions

[44] See email from Bryan Elder, State Water Board, to Andrew Warner, December 10, 2018.
[45] Active Treatment System Plan for Fox Hollow dated February 16, 2018 and uploaded to SMARTS.

to meet CASQA pond design requirements. However, the Discharger did ultimately implement operational changes to prevent future pond overtopping. While this response was reasonable, it took over 15 months to implement minimum sediment and erosion control BMPs and to install the ATS which should have occurred pre-construction as described in the SWPPP. Additionally, staff is not aware that the Discharger undertook any cleanup that would be considered exceptional in response to these violations. Thus, **a factor of 1.2 for Cleanup and Cooperation is appropriate.**

Adjusted Per Day Liability Calculation for Non-Discharge Violations

Adjusted Liability = (Initial Liability)(Culpability)(History)(Cleanup & Cooperation)

Where:

Culpability = 1.3
History = 1.0
Cleanup and Cooperation = 1.2

Therefore:

Adjusted Per Day Liability for Violation 2= *($346,500)(1.3)(1.0)(1.2)=* ***$540,540***

Adjusted Per Day Liability for Violation 3= *($38,500)(1.3)(1.0)(1.2)=* ***$609,180***

Adjusted Per Day Liability for Violation 4= *($22,000)(1.3)(1.0)(1.2)=* ***$34,320***

Adjusted Per Day Liability for Violation 5= *($115,500)(1.3)(1.0)(1.2)=* ***$180,180***

Adjusted Per Day Liability for Violation 6= *($22,000)(1.3)(1.0)(1.2)=* ***$34,320***

Adjusted Per Day Liability for Violation 7= *($11,000)(1.3)(1.0)(1.2)=* ***$17,160***

Statutory Maximum Liability Calculation for Non-Discharge Violations

Statutory Maximum Liability = (Days)(Statutory Max Per Day)

Where:

Statutory Max Per Day = $10,000

Therefore:

Statutory Max Liability for Violation 2= *(63)($10,000)=* ***$630,000***

Statutory Max Liability for Violation 3= *(7)($10,000)=* ***$70,000***

Statutory Max Liability for Violation 4= *(4)($10,000)=* ***$40,000***

Statutory Max Liability for Violation 5= *(21)($10,000)=* ***$210,000***

Statutory Max Liability for Violation 6= *(4)($10,000)=* ***$40,000***

Statutory Max Liability for Violation 2= *(2)($10,000)=* ***$20,000***

Final Liability Calculations for Non-Discharge Violation

Final Liability = Adjusted Penalty, unless it exceeds the Statutory Maximum Penalty

Therefore:

Final Liability for Violation 2= *$540,540 Adjusted Liability < $630,630 Statutory Maximum Liability* ***= $540,540***

Final Liability for Violation 3= *$60,060 Adjusted Liability < $70,000 Statutory Maximum Liability* ***= $60,060***

Final Liability for Violation 4= *$34,320 Adjusted Liability < $40,000 Statutory Maximum Liability* ***= $34,320***

Final Liability for Violation 5= *$180,180 Adjusted Liability < $210,000 Statutory Maximum Liability* ***= $180,180***

Final Liability for Violation 6= *$34,320 Adjusted Liability < $40,000 Statutory Maximum Liability* ***= $34,320***

Final Liability for Violation 7= *$17,160 Adjusted Liability < $20,000 Statutory Maximum Liability* ***= $17,160***

Total Liability

Total Liability for Discharge Violations (Violation 1)

Total Liability for Discharge Violations = *Violation 1*

= ***$258,912***

Total Liability for Non-Discharge Violations (Violations 2 through 7)

Total Liability for Non-Discharge Violations = *Violation 2 +Violation 3 +Violation 4 +Violation 5 +Violation 6 +Violation 7*

=*$540,540+ $60,060+ $34,320+ $180,180 + $34,320+ $17,160*

= ***$866,580***

Total Liability Subtotal

Total Liability Subtotal = *Total Liability for Non-Discharge Violations + Total Liability for Discharge Violation*

= *$866,580 + $258,192*

= ***$1,125,492***

Other Factors

Ability to Pay and Ability to Continue in Business

Based on the currently available information, the Prosecution Team has determined the Discharger has the ability to pay the proposed liability amount and continue in business. The Discharger currently has twelve construction sites actively enrolled in the Construction General Permit statewide.

Economic Benefit

The Enforcement Policy provides that the economic benefit of noncompliance should be calculated using the USEPA Economic Benefit Model (BEN)[46] liability and financial modeling program unless it is demonstrated that an alternative method of calculating the economic benefit is more appropriate. For this case, BEN was determined to be the appropriate method. Using standard economic principles such as time-value of money and tax deductibility of compliance costs, BEN calculates a permittee's economic benefit[47] derived from delaying or avoiding compliance with environmental statutes. "The economic benefit is equal to the present value of the avoided costs plus the 'interest' on delayed costs."[48]

Staff evaluated the types of actions that the Discharger should have taken to avoid the alleged violations and estimated the cost of these actions. Two types of costs were considered: delayed costs[49] and avoided costs[50].

In this case, the Discharger initially failed to adequately implement standard erosion and sediment control BMPs, resulting in significant sediment discharges to Peterson Creek. Site Risk Level Requirements[51] are defined in the Construction General Permit and the Site SWPPP, identifying the BMPs and actions needed to meet these requirements.

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[46] At the time this document was prepared, BEN was available for download at http://www.epa.gov/enforcement/penalty-and-financial-models.

[47] SWRCB 2017 Enforcement Policy Section VI. A. Step 7 - Page 20: "Economic benefit is any savings or monetary gain derived from the act or omission that constitutes the violation. In cases where the violation occurred because the discharger postponed improvements to a treatment system, failed to implement adequate control measures (such as BMPs), or did not take other measures needed to prevent the violations, the economic benefit may be substantial."

[48] SWRCB 2017 Enforcement Policy Section VI. A. Step 7 - Page 21.

[49] Delayed costs include expenditures that should have been made sooner, such as BMPs that were installed too late to avoid the violation.

[50] Avoided costs include the cost of effective erosion and sediment control measures that were not implemented as required. Avoided costs also include expenditures for equipment or services that the permittee should have incurred to avoid the incident of noncompliance, such as treatment for waste that cannot be cleaned up or ongoing costs, additional staffing, and BMP maintenance.

[51] The Site enrolled in the Construction General Permit as a Risk Level 2 and therefore is required to follow the requirements in Attachment D.

Staff reviewed inspection photographs, the CASQA BMP manual, aerial imagery, City of Santa Rosa inspection records, the Site-specific SWPPP, industry specific economics, and cost data provided by the Discharger to identify compliance actions and associated costs that would have avoided or minimized[52] the alleged violations.

The Discharger's Permit Registration Documents indicated that construction activities commenced on August 1, 2016. On October 14, 2016, Regional Water Board staff first observed and recorded in SMARTS noncompliance with the Construction General Permit, and on November 3, 2016, staff observed the first known discharge of muddy construction related storm water runoff entering Peterson Creek. Despite numerous inspections by Regional Water Board staff, as well as City of Santa Rosa staff, the Discharger was slow to install the required BMPs. Furthermore, the Discharger reported over a dozen separate days where storm water discharges exceeded the Construction General Permits effluent standards. These discharges continued throughout the 2016/2017 winter and the beginning of the 2017/2018 winter. Stormwater effluent results were persistently above effluent standards and did not improve until after the Discharger hired a consultant to design the ATS[53] on February 16, 2018. Therefore, for the purpose of this economic analysis, the Discharger derived an economic benefit from not installing the minimum required BMPs and the ATS in a timely and correct manner, as they should have started doing early on in the winter of 2016/2017.

In the winter of 2016/2017, the Discharger was in violation for not installing several types of standard BMPs to comply with the sites minimum Risk Level Requirements specified in Attachment D of the Construction General Permit, such as effective erosion and sediment controls. For simplicity, this economic analysis only considers the required erosion and sediment BMPs, like effective soil cover and linear sediment controls, as a delayed cost. Regional Water Board staff documented some improvements in BMP installations, but the minimum erosion and sediment controls were not installed at the same time, in a collective manner, noticeably correct, or completely throughout the Site at any given time. Regional Water Board staff recognize that some money was invested for erosion and sediment controls, but their installation efforts did meet the requirements of the Construction General Permit in the winter 2016/2017. The assumption that these sediment and erosion control costs were delayed does not mean that the Discharger did not avoid additional BMP costs to their benefit. Therefore, for simplicity and to the Discharger's benefit, the economic benefit analysis for the delayed cost associated with the installation of standard BMPs evaluates the date range starting on November 3, 2016 (when Staff first observed site conditions and unauthorized discharges from the site entering Peterson Creek) until January 19, 2017 (when Staff observed that the Discharger made some efforts to install effective soil cover and linear sediment controls).

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[52] Construction General Permit Section IV. Special Provisions, Subsection D, Duty to Mitigate.: "The discharger shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit, which has a reasonable likelihood of adversely affecting human health or the environment." (Page 22.)

[53] Construction General Permit Section I.G.50 (Page 8): "An ATS is a treatment system that employs chemical coagulation, chemical flocculation, or electrocoagulation in order to reduce turbidity caused by the fine suspended sediment."

To determine the Discharger's economic benefit for delaying the installation of standard BMPs, the analysis assumes the size and geometry of the property is a 22-acre right trapezoid, that straw and hydroseed were used as ground cover each on their respective half of the property, and staked wattles were spaced every 20 feet at a general contour across the Site to meet the linear sediment control requirements of the Permit. These types of BMPs are consistent with the Site SWPPP and those eventually observed by Regional Water Board staff at the Site. It is assumed that installing these BMPs would have had a one-time capital investment of $49,052 and therefore an initial delayed economic benefit of $725.

Based on the July 2016 SWPPP submitted via SMARTS by the Discharger, Site conditions observed by Regional Board staff, and monitoring results submitted by the Discharger, an ATS system was necessary on November 3, 2016. This is the date that Regional Water Board staff first observed and documented muddy water discharging from the Site into Peterson Creek. Although this economic benefit analysis assumes that the minimum required BMPs were gradually installed over time, documentation shows that unauthorized discharges continued to exceed the effluent standards until the Discharger installed an ATS. This is mainly because those BMPs were never observed to be installed correctly or as required, together. In addition to supporting the need for an ATS, the Site SWPPP states that "it may be appropriate to use an ATS when site constraints inhibit the ability to construct a correctly sized sediment basin, when clay and/or highly erosive soils are present, or when the site has very steep or long slope lengths."[54] Staff observed evidence of eroding soils and basins at capacity discharging muddy waters into nearby watercourses early on in the winter of 2016/2017.

Given that the Discharger's SWPPP (submitted at the time of Permit enrollment) described the use of an ATS at the Site, that discharges continued to be above the Construction General Permit effluent limitations into a second winter, and that discharges did not improve until the ATS was installed, the Discharger should have installed an ATS well before they had one designed on February 16, 2018. Since ATS costs on this Site are rentals and include staff to operate, maintain, and sample the system, the Discharger's primary economic benefit for not having an ATS earlier, is an avoided cost.

Staff determined that the Discharger had a combined avoided initial economic benefit of $252,588 for not using an ATS from November 3, 2016 to February 16, 2018.

Please note that in the avoided ATS cost analysis, there is a portion that would have been considered a delayed cost, mainly the installation of the system. However, the Discharger had the opportunity to provide such information, but did not provide it or supply adequately detailed cost analysis, as required by the November 8, 2019 California Water Code Section 13267 Investigative Order R1-2019-0056. Instead, the Discharger provided two cost analyses with an assumed time value of money on December 18, 2019.

[54] Fox Hollow SWPPP, July 2016, pages 3-15.

In the first analysis provided by the Discharger, the cost approximation for eight months of operation of the ATS totaled $305,600. In the second analysis, the Discharger estimated that the cost for eight months of ATS operation was $550,000. In order to account for the cost discrepancy of $244,400 between the two analyses and lack of clarity in the costs provided by the Discharger, the two costs were averaged to determine the cost per month for eight months. Based on information gathered, the BEN model calculated the Discharger's initial economic benefit of the avoided ATS expenditures described above to be $253,113.

Table 3 shows compliance actions and the BEN model inputs and outputs with an assumed liability payment date of January 1, 2022. At the time of the assumed penalty payment date, the Discharger will have accrued a total economic benefit of $365,958.

Table 3: Summary of Economic Benefit Analysis Using the BEN model.

Compliance Action	Initial Economic Benefit	Non-Compliance Date	Compliance Date	Final Economic Benefit at assumed January 1, 2022 Liability Payment Date
Standard BMP Implementation Delayed	$725	11/3/2016	1/19/2017	$1,048
ATS Avoided	$252,388	11/3/2016	2/16/2018	$364,910

Other Factors as Justice May Require

The Enforcement Policy allows for the recovery of staff costs incurred by the Regional Water Board. In this instance, the Prosecution Team is not adjusting the base liability by including staff costs.

Maximum and Minimum Liability Amounts

Maximum Liability Amount *= Max Violation 1 + Max Violation 2 + Max Violation 3*
+ Max Violation 4 + Max Violation 5 + Max Violation 6
+ Max Violation 7
=$580,000+ $630,000+ $70,000 + $40,000 + $210,000
+ $40,000 +$20,000
=$1,580,000

Minimum Liability Amount *= Economic Benefit + 10%*
=$365,958 *+ $36,596*
=$402,554

Final Liability Amount

Final Lability Amount = $1,125,492