Exhibit 2

US EPA Fact Sheet for
February 2020 Starkist Samoa Co. Final NPDES Permit

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET
February 2020

Permittee Name: StarKist Samoa Company

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NPDES Permit No.: AS0000019

I. STATUS OF PERMIT

StarKist Samoa Co. (the "permittee" or "discharger" or "StarKist") has applied for the renewal of its National Pollutant Discharge Elimination System ("NPDES") permit to authorize the discharge of treated effluent from the StarKist Samoa Tuna Cannery to Pago Pago Harbor located in the island of Tutuila, American Samoa. The permittee submitted an application on September 18, 2012, an updated application on April 29, 2016, a dilution modeling study on March 25, 2017, and a revised application on January 31, 2018 to EPA Region 9 and American Samoa EPA ("AS-EPA"). A complete updated application was submitted February 12, 2019. EPA Region 9 has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act, which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States.

The permittee is currently discharging under NPDES permit AS0000019 issued on February 28, 2008. Pursuant to 40 CFR 122.6 the terms of the existing permit are administratively extended until the issuance of a new permit.

This permittee has been classified as a Major discharger.

II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit (2008 – 2013)	Re-issued permit (2019 – 2024)	Reason for change
Ammonia effluent limit has now been reimplemented as Ammonia Impact Ratio ("AIR")	The previous permit specified fixed concentration limits for Ammonia, which did not reflect the dynamic nature of the temperature- and pH-dependent American Samoa Water Quality	Compliance with the ammonia concentration effluent limit will be determined using a ratio, called AIR. The permit limits are set to a value of 1.0.	Implementation of the pH- and temperature-sensitive ASWQS for Ammonia is necessary to ensure protection of the designated uses of the harbor. Use of the AIR provides more flexibility than a specific, fixed effluent concentration and is easier

Permit Condition	Previous Permit (2008 – 2013)	Re-issued permit (2019 – 2024)	Reason for change
	Standard ("ASWQS") for ammonia (a "floating limit").	The permittee must continue to monitor and report ammonia effluent values in addition to the AIR value. Note that AIR is calculated on an ammonia-as-N basis, not ammonia-as-NH_3.	than a floating limit to report and determine compliance.
Flow Rate Limit	The previous permit required flow monitoring but did not require the facility to remain at or below its design flow capacity.	A flow limit has been set at the maximum design flow of the treatment system included in the discharger's upgraded designs (2.9 MGD) Permit also clarifies that the flow limit is a daily, not instantaneous, value.	Several effluent limits in the permit are flow-dependent and thus flows in excess of design treatment capacity could lead to discharge of harmful levels of pollutants. The capacity of the new treatment system must also not be exceeded to ensure adequate treatment.
Removal of Copper, Zinc and Mercury Limits	The previous permit implemented limits for the metals Copper, Mercury and Zinc based on demonstrated Reasonable Potential to exceed the applicable water quality criteria.	The current permit does not implement limits for Copper, Mercury or Zinc. Specific monitoring for Mercury has been retained due to prior total daily maximum load ("TMDL") concerns for this metal in the Harbor.	Analysis for this permit found no Reasonable Potential for Copper, Mercury or Zinc to exceed applicable criteria based on data from the previous permit term (see Table 4 in this fact sheet, below).
Updates to production-level based limits (TSS, Oil and Grease)	The previous permit included several limits based on production (Total Suspended Solids ("TSS"), Oil & Grease, Ammonia, metals).	The production-based limits have been updated to reflect the production level projected in the permit application.	Production-based limits are increased slightly as the production level has also increased by a small amount (from 600 to 608.5 tons/day).
Increased Total Nitrogen ("TN") and Total Phosphorous ("TP") limits.	The previous permit implemented nutrient limits based on mixing zones approved at the time by the American Samoa Environmental Quality Commission.	The Total Nitrogen and Total Phosphorous limits have been increased, based on changes to the operation of the joint outfall and an extensive analysis including improved dilution modeling.	EPA has chosen to grant an increase in dilution based on reasonably protective mixing analysis and the reduced burden on the existing assimilative capacity in the receiving water due to the cessation of major discharges from the adjacent Samoa Tuna Processors cannery using the same outfall.

Permit Condition	Previous Permit (2008 – 2013)	Re-issued permit (2019 – 2024)	Reason for change
Statement of Dilution Basis	The previous permit did not explicitly summarize the basis for dilution factors granted to specific pollutants.	The current permit references specific content in this Fact Sheet which documents the dilution factor granted for each pollutant and the analysis supporting them.	Responding to discharger's comment seeking greater clarity on basis of dilution allowed.
Revised Toxicity Testing method ("TST")	The previous permit required toxicity testing using the older Whole Effluent Toxicity ("WET") protocol.	The current permit requires use of the TST protocol for toxicity testing.	The TST protocol is a preferred alternative due to better statistical power (more representative results) with fewer samples collected.
Revised Receiving Water Monitoring Plan	The previous permit specified a receiving water monitoring plan which was frequently revised over the course of the permit.	The current permit sets a detailed new receiving water monitoring plan with updated sampling requirements. This includes retention of several prior monitoring stations with the addition of new stations based on both the permittee's and AS-EPA's submissions, see permit section I.(E)	The appropriateness of monitoring station locations and nomenclature needed to be updated for new treatment and discharge protocols at the facility, to validate the behavior of the effluent plume, and to ensure protection of newly listed endangered corals.
Electronic Reporting	The previous permit required monitoring data be submitted on then-standard paper discharge monitoring report ("DMR") forms.	The new permit requires electronic data submission through NetDMR.	Electronic reporting of NPDES permit monitoring data is now a national policy to promote transparency and efficiency. The new permit implements this policy.

III. GENERAL DESCRIPTION OF FACILITY

The permittee owns and operates a tuna processing and canning facility (the "cannery") located in the town of Atu'u on the island of Tutuila in the Territory of American Samoa (see maps in Attachment A to the permit). The facility processes frozen whole tuna that are canned as tuna fish for human consumption and pet food. It also processes fish by-products into fish meal and other products. These activities all fall under the North American Industrial Classification System ("NAICS") code 311710, and the older Standard Industrial Classification ("SIC") codes 2091, 2047, and 2048.

In the permit renewal application, the permittee indicated a long-term average daily production of 443 metric tons or roughly 976,648 lbs of tuna processed per day (January-December 2017). During

the permit term, the permittee anticipates a maximum average daily production[1] of 552 metric tons or 1,216,952 lbs of tuna processed per day.

The facility has undergone at least two major changes to its operations after the issuance of the existing permit.

Prior to 2012, the cannery collected its "high-strength" fish waste, which generally contains high levels of nutrients, biological oxygen demand ("BOD"), and oil and grease, and disposed of it offshore at an approved ocean dumping site. A major Tsunami struck the island in September 2009, damaging the facility, disrupting operations, and leading to the suspension of operations at the neighboring cannery with which the permittee had shared the ocean disposal costs. The permittee opted to discontinue ocean disposal of the high-strength waste in May 2012, and informed EPA of this change in mid-September of that year. As a result of the change this high-strength waste is routed through the on-site treatment equipment and discharged through the existing outfall to the harbor.

The permittee is conducting a series of treatment and operational upgrades under a judicial consent decree ("Consent Decree") to achieve current and future compliance with permit limits.

IV. DESCRIPTION OF RECEIVING WATER

The facility discharges to Pago Pago Harbor, the largest natural harbor in American Samoa and a major location for industrial activity (canning, ship repair, port facilities, fuel terminal), wildlife (sea birds, sea turtles, coral reef flats), and human water contact (recreation including swimming, boating, scuba diving, fishing, and tourism).

Pago Pago harbor is connected to the South Pacific Ocean and fed by numerous small streams. Due to the small size and relatively limited development of those watersheds, the majority of point-source pollutant discharge to the harbor is likely to be direct discharge from shoreline facilities, which include all the NPDES-permitted industrial facilities in American Samoa (EPA 2014 Bacteria TMDL, section 5.1.2).

The harbor has a comparatively limited tidal current flow from the ocean near the site of the discharge (StarKist Samoa Mixing Zone Application ("MZA"), section 5.4.1) and natural flows are primarily wind-driven, with flow directions that vary by depth (MZA 5.4.2 and exhibit 5-8). The most recent detailed study on the Pago Pago Harbor flow pattern dates from 1993. The residence time of a given parcel of water in the harbor is approximately 34 days, indicating poor flushing/circulation (EPA 2007 TMDL for Mercury and PCBs, §1.2.1) and the resultant potential for build-up of pollutants to harmful levels over time.

Monitoring data in Pago Pago Harbor over the preceding decade have shown frequent and widespread exceedances of nitrogen standards as well as intermittent, localized depletions of dissolved oxygen to levels normally considered unable to support marine life. Data collected since the most recent (March 2018) treatment upgrades completed by the permittee suggest potential improvement of these conditions.

[1] The anticipated maximum average daily production is based on the total metric tons of tuna processed over a year divided by the number of days of operation in the year. This is not a design production value.

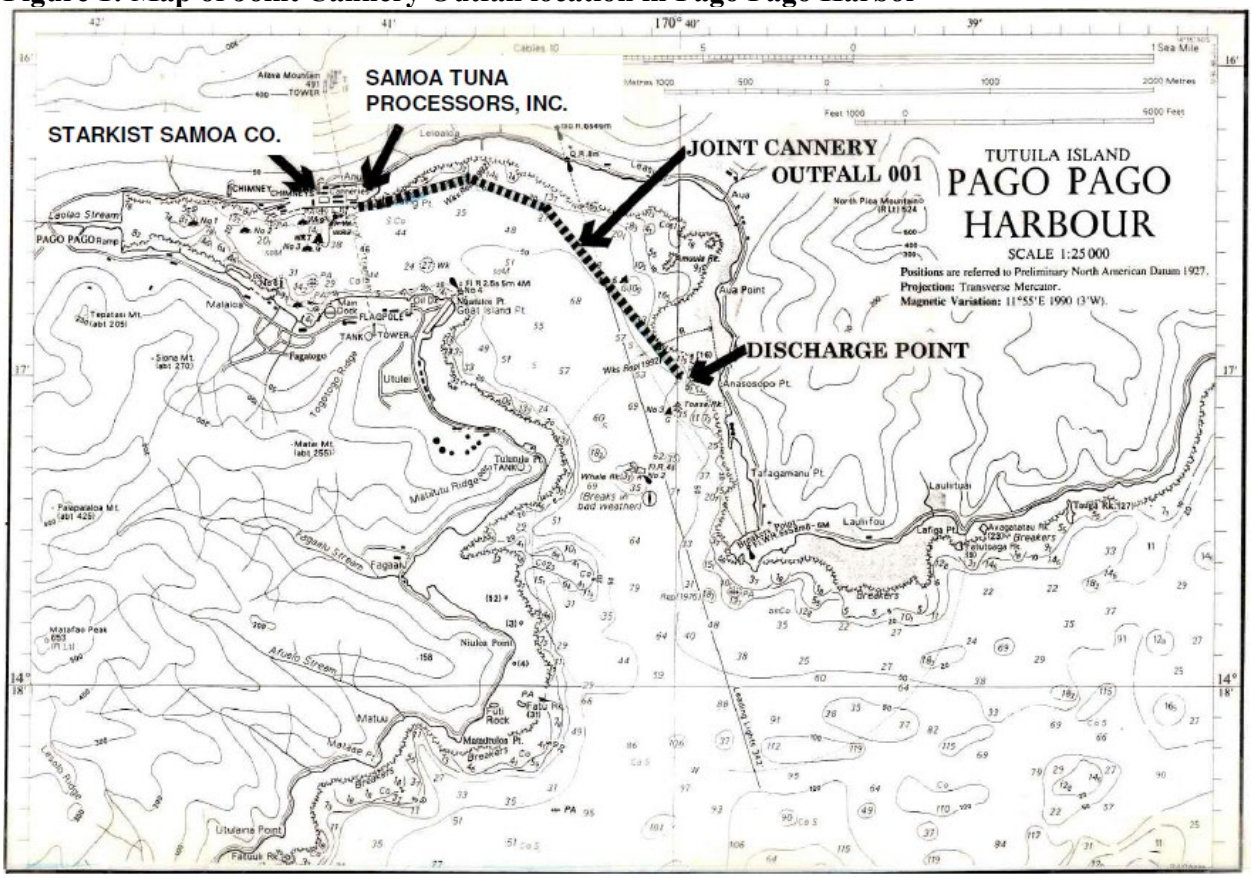
Additionally, Total Maximum Daily Load ("TMDL") requirements have been established for bacteria, lead, mercury, and PCBs in Pago Pago Harbor due to conditions not meeting water quality standards. However, the cannery is not allocated a specific Waste Load Allocation ("WLA") for any of these pollutants in the TMDLs. Instead, a general WLA for bacteria is set equal to the applicable ASWQS for Pago Pago Harbor, and the TMDLs for the other 3 parameters limit their scope to Inner Pago Pago Harbor, while the discharge from this facility is to Outer Pago Pago Harbor.

V. DESCRIPTION OF DISCHARGE

The permittee is in the process of considering treatment system design changes and construction of treatment upgrades. This permit is based on existing treatment systems. Treatment systems currently known to be in place and operating include:

- In-plant flow controls and water recycling from specific processes (retort-pouch heating water) to limit the overall volumetric load placed on the treatment system and improve holding times for treatment processes,
- Screening separation for solids capture,
- Centrifuge separation of a measurable fraction of suspended solids and oil & grease,
- Dissolved Air Flotation ("DAF") unit for further separation of solids,
- Use of an evaporator to process specific wastewater flows (fish meal sump, pre-cooker sump) to achieve greater separation of fish meal solids as a salable product rather than waste for harbor discharge

Figure 1: Map of Joint Cannery Outfall location in Pago Pago Harbor



source: 2017 Mixing Zone Application

During facility operations, the permittee discharges to Pago Pago Harbor at the following discharge point:

Discharge Point	Discharge Point Description	Effluent Description	Discharge Point Latitude	Discharge Point Longitude
001	Joint Cannery Outfall	Industrial Wastewater	14º 16' 49"S	170º 40' 08"W

Discharge Point No. 001 is located approximately 1.5 miles seaward from the facility (still within the harbor) and began operation in February 1992. The discharge point, also known as the Joint Cannery Outfall or ("JCO") is shared by both the permittee and the adjacent tuna processing facility operated as Samoa Tuna Processors Inc. ("STP"), which is currently not operating any canning activity and under a 10-year lease agreement with StarKist Samoa Co. Future discharges from the STP facility to the harbor will also be subject to permitting by EPA, thus providing EPA an opportunity to coordinate between both permits to ensure any such discharges from the JCO will not conflict with ASWQS or the requirements of this permit.

Discharge Point No. 001 terminates in a multiport diffuser at a depth of approximately 176 feet in Outer Pago Pago Harbor. The diffuser consists of six 5-inch diameter active lateral ports and a 2-inch vent port installed at the top edge of the end gate in 2012. When the previous permit was issued in 2008, two of the six 5-inch ports were out of service, but they were returned to service during the term of that permit.

Table 1 shows data related to discharge from Outfall 001 based on data submitted by the permittee in the NPDES renewal application, discharge monitoring reports ("DMRs"), and supplemental submissions.

Pollutants believed to be absent or never detected in the effluent are not included in Table 1. The data shows:

A. Infrequent low pH
B. Elevated temperature from Sept. 2016 thru May 2017
C. Elevated mass discharges of:
    1. Total Suspended Solids
    2. Oil & Grease,
    3. Total Nitrogen
    4. Total Phosphorous, and
    5. Total Ammonia
D. Elevated concentrations in the effluent of:
    1. Total Ammonia
    2. Biochemical Oxygen Demand ("BOD_5")

All exceedances are discussed further in Part VI.B.4. Some of the parameters that were reported in the application are not limited in the current permit (including Bromide, Arsenic, and Bis (2-ethylhexyl) Phthalate) due to a lack of applicable water quality criteria.

Table 1. Effluent Data for Outfall 001 from April 2008 to March 2019.

Parameter	Units (1)	2008 Permit Effluent Limitations		Effluent Data 04-2008 thru 03-2018			Effluent Data after upgrades 03-2018 thru 03-2019		
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Flow Rate	MGD	Monitoring Only	Monitoring Only	1.89	3.06	118	2.7	2.74	153
pH(2)	Standard Units	Not < 6.5 SU, Not > 8.6 SU;		From 6.0 to 8.1		116	8.2	8.2	151
Temperature	ºF	90	95	92	98	120	90.2	92	154
Total Suspended Solids	Lbs/day	3960	9960	26592	49038	120	4102	4102	137
BOD_5	mg/L	Monitoring only		6987.8	9730.4	117	918.3	1262.4	48
Oil & Grease	Lbs/day	1008	2520	8804	18768	118	453	918.6	81
Total Nitrogen	Lbs/day	1200	2100	6847	8690	120	4546	4575.2	137
Total Phosphorous	Lbs/day	192	309	1708.2	2111.3	120	520	520	137
Total Ammonia (as N)	mg/L	83.36	167.26	337.3	450	117	186.4	186.4	137
	Lbs/day	2016	4045	3841.4	6493	117	3686	3686	137
Mercury (total recoverable)	µg/L	1.80	4.72	0.702	0.702	18	0.21	0.21	6
	Lbs/day	0.04	0.11	0.04	0.01	18	0.00462	0.00462	3
Copper (total recoverable)	µg/L	58.42	117.22	18.1	18.1	18	5.39	6.9	6
	Lbs/day	1.41	2.84	0.26	0.26	18	0.03	0.03	3
Zinc (total recoverable)	µg/L	1138	2284	818	818	19	95.3	150	6
	Lbs/day	27.52	55.24	12.49	12.49	19	1.27	1.27	3
Toxicity (chronic)	TUc (2)	--	-	~1000	-	18	500	500	2

(1) Mass based limits calculated using 2.9 MGD flow.
(2) TU_c are "Toxic Units, chronic", the standardized unit for measurement of effects on a toxicity test. A "Pass" is normally obtained on results of less than 1 TU_c.

A March 30, 2015 EPA inspection and on-site laboratory audit in September 2015 revealed deficiencies in facility management, treatment system operation, and sample collection and analysis. Problems included a lack of familiarity with the permit requirements and the underlying design of the treatment system, as well as equipment and training shortcomings for the laboratory analysis,

particularly when it came to the high-strength wastewater stream. Reviews of effluent and receiving water monitoring data showed a pattern of permit limit exceedances, starting when high-strength waste discharge through the JCO began in 2012-2013, after ocean disposal was discontinued by the Permittee.

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., "technology-based effluent limits") and the water quality standards applicable to the receiving water (e.g., "water quality-based effluent limits"). EPA has established the most stringent of the applicable technology-based or water quality-based standards in the permit, as described below.

A. Applicable Technology-Based Effluent Limitations

Consistent with Section 306 of the Clean Water Act ("CWA"), EPA has established national standards based on the performance of treatment and control technologies for wastewater discharges to surface waters for certain industrial categories. Effluent Limitation Guidelines ("ELGs") represent the greatest pollutant reductions that are economically achievable for an industry, and are based on Best Practicable Control Technology ("BPT"), Best Conventional Pollutant Control Technology ("BCT"), and Best Available Technology Economically Achievable ("BAT"). (Sections 304(b)(1), 304(b)(4), and 304(b)(2) of the CWA, respectively.

As a tuna processing and canning operation, the facility has acknowledged industrial activities falling under the older SIC codes 2091, 2047, and 2048 (revision of permit application submitted January 31, 2018), which are all encompassed under the newer NAICS code 311710. In accordance with the applicable ELGs, technology-based effluent limitations are proposed for the following pollutants based on nationally promulgated ELGs for Tuna Processing (40 CFR § 408.142). These effluent ELGs represent the degree of effluent reduction attainable by the application of BPT, BCT, and BAT. These requirements are described below.

In addition, technology-based treatment requirements may be imposed on a case by case basis under Section 402(a)(1) of the CWA, to the extent that EPA promulgated effluent limitations are inapplicable (i.e., the regulation allows the permit writer to consider the appropriate technology for the category or class of point sources and any unique factors relating to the applicant) (40 CFR § 125.3(c)(2)).

1. **Total Suspended Solids ("TSS").** Pursuant to 40 CFR §§ 408.142 and 408.147, effluent limitations are established for TSS and are based on BPT. As provided in 40 CFR 408.147, BCT limitations shall be the same as the BPT limitations. The ELGs for BPT for TSS include a daily maximum of 8.3 lbs/1,000 lbs of seafood processed per day and a 30-day average of 3.3 lbs/1000 lbs of seafood processed per day. The previous permit established TSS effluent limitations based on the average daily production of 600 tons (US) of seafood processed per day. Based on the permittee's anticipated maximum average daily production of 552 metric tons (or 608.5 tons (US) when converted to identical units) or 1,216,952 lbs of tuna processed per day during the permit term, EPA proposes a maximum daily effluent limitation of 10,101 lbs/day, and a monthly average effluent limitation of 4,016 lbs/day for TSS. The limits are

calculated as follows:

Maximum Production * (monthly/daily) production-based ELG limit * unit conversion = (monthly/daily) permit limit

2. **Oil and Grease**. Pursuant to 40 CFR §§ 408.142 and 408.147, effluent limitations are established for oil and grease and are based on BPT. As provided in 40 CFR 408.147, BCT limitations shall be the same as the BPT limitations. The ELGs for BPT for oil and grease include a daily maximum of 2.1 lbs/1,000 lbs of seafood processed per day and a 30-day average of 0.84 lbs/1,000 of seafood processed per day. The previous permit established Oil and Grease effluent limitations based on the average daily production of 600 tons (US) of seafood processed per day. Based on the permittee's anticipated maximum average daily production of 552 metric tons (608.5 tons US) or 1,216,952 lbs of tuna processed per day during the permit term, EPA proposes a maximum daily effluent limitation of 2,556 lbs/day, and a monthly average effluent limitation of 1,022 lbs/day for Oil and Grease.

3. **pH.** 40 CFR § 408.142 establishes a required pH range of 6.0 to 9.0 standard units for discharges from tuna processing based on BPT. However, the American Samoa Water Quality Standards requirements for pH in the receiving water are more stringent (the narrower range of 6.5 to 8.6 standard units) and supersede this technology-based effluent limit (see section VI.C, below).

4. **Compliance with Federal Anti-Backsliding Regulations for Proposed Technology-Based Effluent Limitations.**
ELGs provide the basis for technology-based effluent limits in the permit. The CWA prohibits the renewal or reissuance of a NPDES permit that contains technology-based effluent limits that are less stringent than those established in the previous permit, except as provided in 40 CFR § 122.44(l). This is referred to as “anti-backsliding.” The permit establishes less stringent mass-based technology-based effluent limitations for total suspended solids and oil and grease based on an estimated increase in the daily production level relative to the previous permit (ELGs for seafood processors are production-based, and the discharger is projecting an increase in production from 600 to 608.5 tons equivalent). 40 CFR § 122.44(l)(1) allows for backsliding the limits in the previous permit to technology-based effluent limitations based on the new production value because the circumstances on which the previous permit was based (i.e., a lower production of processed tuna than now projected for this next permit term) have materially and substantially changed since the time the existing permit was issued and would have constituted cause for a permit modification under 40 CFR § 122.62(a).

   Furthermore, as allowed by 40 CFR § 122.45(b)(2)(ii)(A)(1), EPA may include a condition establishing alternate permit limitations based on anticipated increases in production levels (not to exceed maximum production capability). EPA believes that the projected maximum production capability of 608.5 tons (US) will be a reasonable measure of the facility’s actual production rate during the permit term.

Table 2. Summary of New Technology-based Effluent limitations for Discharge Point 001

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily

Total Suspended Solids	Lbs/Day	4,016	10,101
Oil and Grease	Lbs/Day	1,022	2,556

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR § 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority uses procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR § 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* ("TSD") (Office of Water, EPA, EPA/505/2-90-001, March 1991) and the *U.S. EPA NPDES Permit Writers' Manual* (Office of Water, EPA, September 2010). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants - Reasonable Potential Analysis

1. Applicable Standards, Designated Uses and Impairments of Receiving Water

The American Samoa Water Quality Standards, 2013 Revision ("ASWQS") at American Samoa Administrative Rule No 001-2013 (§§ 24.0201 *et seq*.) establish water quality criteria for the following beneficial uses in Pago Pago Harbor:

(A) Recreational and subsistence fishing except for exclusions as specified under federal regulations such as no take zones;
(B) Boat-launching ramps and designated mooring areas;
(C) Subsistence food gathering; e.g. shellfish harvesting except for exclusions as specified under federal regulations such as no take zones;
(D) Aesthetic enjoyment;
(E) Whole and limited body-contact recreation, e.g. swimming, snorkeling, and scuba diving;
(F) Support and propagation of marine life;
(G) Industrial water supply;
(H) Mari-culture development except for exclusions as specified under federal regulations such as no take zones;
(I) Normal harbor activities; e.g. ship movements, docking, loading and unloading, marine railways and floating drydocks; and
(J) Scientific investigations.

Pago Pago Harbor is listed as impaired for several pollutants according to the CWA Section 303(d) List of Water Quality Limited Segments. Existing impairments each have a Total Maximum Daily Load or "TMDL" analysis associated with them:

- Ocean Shorelines in the Pago Pago watershed are listed as impaired for enterococci (*American Samoa Bacteria TMDL for Beaches and Streams*, approved August 28, 2015). The enterococci limits specified in the bacteria TMDL are identical to those specified in the ASWQS. Therefore, compliance with ASWQS for enterococci ensures compliance with the requirements of that TMDL. The TMDL does not specify waste load allocations for the StarKist Samoa cannery and no bacteria limits are set in the permit.
- The inner harbor is listed for lead (*TMDL Development for Lead, Pago Pago Harbor, Territory of American Samoa*, approved June 23, 2001), with a particular emphasis on contaminated sediments in the inner harbor. The lead TMDL does not provide a waste load allocation ("WLA") for the permittee, asserting "results of heavy metal analyses from [both canneries and the Utulei sewage treatment plant] have not demonstrated any significant amount of lead in their effluent discharge" (see §3.1 of the TMDL). As the permittee's discharge is to the outer harbor, no further TMDL provisions apply to the discharge.
- The inner harbor is also listed for mercury and PCBs (*Pago Pago Inner Harbor mercury and PCBs TMDL*, approved Feb. 23, 2007), The mercury and PCBs TMDL does not provide a WLA for the permittee as its analysis is limited to the inner harbor. As the permittee's discharge is to the outer harbor, no provisions from this TMDL apply to the discharge.

Note that although the permittee's facility is located in the inner harbor, the discharge authorized in this permit is exclusively to the outer harbor, through a long outfall.

Although the permit does not contain specific TMDL-derived limits because none of the TMDLs in the area specify a WLA applicable to this discharge, the effluent limits included in this permit are consistent with the assumptions and rationales for the wasteload allocation(s) for this facility provided in the TMDLs.

2. Dilution in the Receiving Water

The ASWQS allow for zones of mixing, and associated credit for dilution, in specific circumstances contingent on approval of the discharger's request for mixing by the Environmental Quality Commission of the American Samoa Government and its authorized agents ("EQC"). The requirements for requesting and receiving approval of a mixing zone are specified in ASWQS §24.0207. A "*zone of mixing*" ("ZOM") means a defined portion of a water body receiving water around a point source within which specific modifications of applicable water quality standards are permitted by the EQC, and a *"zone of initial dilution"* ("ZID") is that area of a plume where dilution is achieved due to the combined effects of momentum and buoyancy of the effluent discharged from an orifice.

The previously approved mixing zone defined in the 2008 fact sheet is "a circle with a radius of 1,300 feet from the center of the diffuser, or the 30-foot depth contour, whichever is closer to the diffuser" (EPA, 2008 fact sheet, Part IV(B)(3)(c)). The 30-foot provision implements the ASWQS prohibition against including "the surface of the water body, any part of the shoreline, or any part of any barrier- or fringing reef" in a mixing zone (ASWQS §24.0207(b)(9)). The

nearest fringing reef is approximately 500 feet northeast of the diffuser location. Therefore, the discharger's requested mixing zone for the new permit is a rough half-circle to avoid impinging on these protected areas. The discharger is also responsible for ensuring ASWQS are met before the edge of the reef flat and that the effluent plume does not reach the surface.

It is the policy of the EQC that zones of mixing shall only be granted upon a finding that no other practicable means of waste treatment and disposal are available. Further, it is the policy of the EQC that zones of mixing shall be limited to the smallest area possible (§24.0207(a)). Section 24.0207(c)(7) further notes that "the granting of a mixing zone shall be subject to approval by USEPA."

To implement the "smallest possible area" condition, in the 2008 permit several pollutants were allocated only the dilution necessary to comply with ASWQS, reducing the effective mixing zones for those pollutants to a smaller subset of the 1,300-foot semicircle described above.

The discharger submitted a Mixing Zone Analysis ("MZA") requesting changes to mixing allocations to EPA and AS-EPA in March 2017, the *Revised Request for Water Quality Certification and Definition of Mixing Zones for the Joint Cannery Outfall* (consultant GDC on behalf of StarKist and STP, March 22, 2017). The MZA presented 22 differing dilution scenarios based on varying assumptions about effluent flows, receiving water density profiles, and other variables, resulting in several differing dilution factors for different pollutants, as in the 2008 permit. In all cases the requested dilution was significantly greater than what was approved under the 2008 permit, as shown in Table 3.

AS-EPA and EPA analyzed the requests for significantly increased mixing from the perspective of ensuring protection of water quality in Pago Pago Harbor, and considered the following:

A. Limited current data.

The analysis of currents in the harbor, used as an input for all modeling in the 2017 MZA and subsequent analyses, is unreliable. Current speeds are a major factor in dilution calculations, with lower current speeds generally leading to reduced dilution. The current data used in the MZA were collected in the mid-1980s using instruments with precision too limited to measure the low current speeds encountered and therefore unreliable for identifying a "worst case" (10^{th} percentile) current speed as specified per EPA guidance. These values were supplemented only with data from a two-event dye study conducted in 1993 under a previous NPDES permit (MZA, § 5.4.2). Due to the low precision of the instruments used to collect data in the mid-80s, plus the limitations of the dye studies used in 1993, among other factors, these values may not reliably represent the full range of, and "worst case" scenarios of, current speed for this discharge.

ASWQS require the Zone of Initial Dilution to be based on an assumption of zero ambient current (ASWQS §24.0201). As shown in the model input files included in the MZA, a non-zero current speed was used for all MZA model runs including those used to define critical initial dilution.

B. Limitations of the chosen modeling software and approach

The modeling software StarKist used to calculate the requested dilution values is not appropriate for this particular mixing scenario, especially in the context of boundary interactions and complex current patterns in Pago Pago Harbor.

The modeling software used to prepare the MZA was UDKHDEN (2017 MZA, executive summary), an older modelling software developed in 1985. UDKHDEN became part of the DKHW model in 1999 and was last publicly updated in 2001 as part of the Visual PLUMES package. (Frick, 2003).

The modeling software used in the MZA calculates dilution as if the discharge were to an infinite, boundary-less ocean. The model is not capable of accounting for discharges interacting with boundaries of the waterbody (e.g., the underwater coral reef slope, or the shoreline). Both types of boundaries occur within the requested mixing zone area, and AS-EPA has recorded examples of shoreline interaction. Because the shoreline is more distant from the diffuser than the reef slope, in both depth and horizontal separation, reef-slope interaction is also likely to have occurred.

Furthermore, model outputs require additional analysis when currents drive water already containing effluent through the area of the discharge plume multiple times, because this reduces the capacity of the water to absorb and dilute additional effluent. Given that the current may reverse direction depending on depth, it is possible for effluent to be carried away from the diffuser in one direction, then as it rises encounter an opposing current and be carried back over the diffuser location, re-introducing diluted effluent and reducing the overall effective dilution. This phenomenon is known as “re-entrainment” and is a common factor in modeling discharges to estuarine and other near-shore ocean waters, such as this discharge to Pago Pago Harbor, and which does not appear to have been considered in the discharger’s MZA.

More modern modeling software packages, such as the industry-standard CORMIX, have a built-in capability to account for these boundary- and re-entrainment effects. The complexities of the permittee’s dilution scenario led EPA to contract with the publisher of CORMIX, MIXZON Inc., to perform several model runs using the discharger’s own input values with this newer software. MIXZON also prepared scenarios for various values of effluent flow volume, ambient density profile, and other variables to assess the sensitivity and reliability of modeled results. The results of this EPA modeling indicate that, without adjusting any other input data and only changing to a more modern modeling tool, the effluent plume behaves significantly differently from what the discharger proposed by relying on the results of the simpler UDKHDEN model. Specifically, under a set of reasonable worst-case “critical conditions”, rather than reaching an equilibrium “trapping level” dozens of meters below the water surface (2017 MZA, exhibit 7-2 *et seq*), the CORMIX results indicate the plume rapidly rises to within less than 10 meters of the surface within minutes of being discharged. Depending on the specific scenario, a part of the plume containing a significant concentration of effluent, the so-called plume “half-width”, may rise to within ~3 meters of the surface or reach the surface directly. Because the ASWQS prohibit inclusion of the water surface in any mixing zone (see ASWQS § 24.0207(b)(9)), standards must be met with the amount of dilution achieved before the effluent reaches the surface (or any part of the shoreline or any barrier or fringing reef), which the CORMIX model suggests occurs at roughly a 330:1 dilution. Different scenarios using StarKist’s preferred assumptions for the density profile led to a modeled dilution factor of 343:1, a variance of less than 4%, validating the range of EPA’s model results and invalidating StarKist’s claimed basis for a much greater 1008:1 dilution. In a January 14, 2020 Technical Memorandum prepared by Geosyntec on StarKist’s behalf, the discharger asserts that it is capable of complying with draft permit limits, which were derived using the 330:1 dilution. Based on the ASWQS provision limiting mixing

zones to the "smallest possible area," EPA has based the permit limits on the 330:1 dilution associated with the smallest mixing zone necessary to enable the discharge to meet ASWQS.

C. Failure of model to reproduce observed plume behavior

The permittee's model results in the 2017 MZA all show the plume reaching an equilibrium ("trapping") depth well below the surface of the harbor. AS-EPA has received numerous reports from both boaters and residents on the shoreline of fish wastes floating on the harbor surface, including photographic documentation. As the ASWQS explicitly disallow inclusion of "the surface of the water body, any part of the shoreline, or any part of any barrier- or fringing reef" in a mixing zone, the failure of the MZA modeling to predict these recorded instances of plume surfacing or impingement on other protected areas strongly suggests that the 2017 MZA is not a representative analysis of what occurs in Pago Pago Harbor.

In consideration of the above, EPA finds the discharger's requested dilution allowance in the 2017 MZA to be insufficiently protective of the receiving water. Accordingly, the permit implements dilution factors based on EPA's own modeling or, for pollutants where there was no basis for increased dilution allowance, dilution factors equal to those used in the 2008 permit.

Existing, requested, and EPA-accepted dilution factors are summarized as follows:

Table 3: Comparison of existing, requested and proposed dilution factors

Parameter	Ammonia	Copper	Zinc	Mercury	Nitrogen	Phosphorus
2008 approved dilution	313:1	25:1	25:1	40:1	248:1* (see below)	248:1* (see below)
2017 MZA request	536:1	200:1	200:1	200:1	1008:1	1008:1
2020 permit dilution	313:1	25:1 (but no RP, see below)	25:1 (but no RP, see below)	40:1 (but no RP, see below)	330:1	330:1

Ammonia dilution of 313:1 was approved in the 2008 permit on the basis of the ability of the discharge to comply, at the edge of a hydrologic ZID, with ASWQS for ammonia. Pursuant to ASWQS § 24.0207(b)(g), pollutants with potential to cause chronic toxicity (such as ammonia) may not exceed chronic toxic levels at the edge of the ZID. Due to detection of ammonia levels at the ZID in excess of the applicable ASWQS during the preceding permit term, any increase in mixing and total discharge of ammonia is unlikely to be adequately protective of water quality. Therefore, EPA has chosen to carry over the dilution factor of 313:1 for ammonia from the previous permit.

Dilutions for copper, zinc, and mercury that applied the ASWQS requirement that mixing zones be "as small as possible" were approved in the 2008 permit as sufficiently protective of water quality. The discharge under the previous permit appears to have consistently met ASWQS and applicable federal standards for copper, zinc, and mercury with the allowed dilution allocations. The ability of the discharge to comply under the existing dilution allocations and mixing zones

for metals does not suggest a need for additional mixing. The dilution used in the permit is therefore consistent with the 2008 permit.

For Total Nitrogen and Total Phosphorus, the previous permit authorized a dilution factor of 248:1, though this was not explicitly stated in the 2008 permit document and was instead derived from the ratio of the permit limits to the ASWQS applicable at the time the permit was issued. As described above in section VI.B.2, this dilution factor has been updated to 330:1 and is additionally subject to antidegradation requirements (see section VI.C. below).

D. Incorporation of mixing zone into receiving water monitoring program

The permittee's MZA sought a mixing zone 981 feet in radius, with a claimed dilution of 1008:1 within that area. EPA's preceding permit allocated only a 248:1 mixing ratio within a mixing zone of approximately double that area (1300 feet in radius). Revised modeling conducted by EPA using the CORMIX software package to ensure compliance with ASWQS found that, under a reasonable worst-case-scenario, the maximum mixing to take place before the effluent plume interacted with a defined mixing zone boundary (e.g., water surface, reef slope/reef flat, cessation of effective mixing) was 343:1. Given the uncertainties in model inputs described above and the discharger's assertion that it can meet limits based on 330:1 dilution, EPA has implemented that dilution factor in the permit limits for the affected parameter(s). EPA has set receiving water monitoring requirements at the old (1300-foot) and permittee-proposed (981-foot) mixing zone radii, as well as sensitive locations like nearby coral reef boundaries, to evaluate modeled mixing performance with real-world data.

3. Type of Industry

The permittee's facility is one of the largest tuna processing and cannery operations in the United States. Tuna canneries are complex industrial operations with numerous possible processes contributing to the composition of their wastewater. Typical pollutants in a cannery discharge include solids (both settleable and suspended); oil and grease in high amounts; nutrients (TN, TP) in high amounts, which result in significant levels of ammonia and changes in pH and temperature; metals from both fish tissue sources and canning processes; and various cleaning and treatment chemicals which may be in use at the facility.

4. History of Compliance Problems and Toxic Impacts

The permittee is currently subject to a Consent Decree for permit violations from 2013-2017 based on an EPA enforcement action.

Regular exceedances of permit limits were reported in DMRs for:

- Ammonia (July 2013-October 2014 and September 2015-March 2018), up to 190% the monthly average mass limit and 4 times the monthly average concentration limit;
- Total nitrogen (May-October 2014, excluding July, and following correction of procedural errors by the facility's laboratory, then again continuously from July 2015-March 2018), up to 570% the monthly average mass limit;
- Total phosphorus (July 2015-February 2018, excluding November 2017) at levels up to 8.8 times the average monthly mass limit.

- Oil and grease (April 2014-April 2015, excluding July, September, and December 2014, and again July 2015-January 2017, and April and July 2017) up to 8 times the monthly average mass limit;
- Low pH reported September and October 2015 and May-June 2016;
- Total Suspended solids on October-November 2014, February 2015, April 2015-February 2017, April 2017, and February 2018, up to levels 6.7 times the monthly average mass limit;
  and
- Effluent temperature exceedances from September 2016-May 2017,

Under the Consent Decree, the permittee is required to install treatment upgrades and make other changes to bring the facility into compliance with applicable permit limits. Note that in later sections of this fact sheet, only data collected after March 2018 are evaluated, as those data are considered representative of the treatment system's current performance after already-implemented upgrades.

5. Existing Data on Toxic Pollutants

For pollutants with effluent data available, EPA has conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control* (EPA 1991), hereinafter the "TSD." These statistical procedures calculate the projected maximum effluent concentration based on monitoring data and account for effluent variability and a limited data set. The projected maximum effluent concentrations were estimated assuming coefficients of variation and the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of daily effluent values (sections 3.3.2 and 5.5.2 of the TSD). EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

Projected maximum concentration = C_e × *reasonable potential multiplier factor.*

Where "C_e" is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD.

Note that the table below is based only on data collected after the most recent upgrades to the treatment system were installed (March 2018) in order to be representative of current performance.

Table 4: Summary of Reasonable Potential Statistical Analysis (March 2018 – March 2019 data):

Parameter[(1)]	Units	Maximum Observed Concentration	*n*	Coeff Of Variation (CV)	RP Multiplier	Projected Maximum Effluent Concentration	Dilution Factor	Projected Maximum mixed concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
Total Nitrogen	mg/L	297.4	137	0.248	1.127	335.171	330	1.02	0.2 mg/L (AS WQS)	Y

Parameter[1]	Units	Maximum Observed Concentration	*n*	Coeff Of Variation (CV)	RP Multiplier	Projected Maximum Effluent Concentration	Dilution Factor	Projected Maximum mixed concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
Total Phosphorous	mg/L	25.1276	137	0.508	1.264	31.758	330	0.10	0.03 mg/L	Y
Total Ammonia as N[2] (acute)	mg/L	186.383	137	0.46424	1.241	231.271	313	0.74	4.44 (AS WQS)	N
Total Ammonia as N[2] (chronic)	mg/L	186.383	137	0.46424	1.241	231.271	313	0.74	0.67 (AS WQS)	Y
Mercury (total recoverable), acute	µg/L	0.21	7	0.6	3.600	0.756	40	0.019	0.05 µg/L (AS WQS)	N
Mercury (total recoverable), chronic	µg/L	0.21	7	0.6	3.600	0.756	40	0.019	0.05 µg/L (AS WQS)	N
Copper (total recoverable), acute	µg/L	6.9	7	0.6	3.600	24.84	25	0.994	4.8 ug/l (aquatic life, acute)	N
Copper (total recoverable), chronic	µg/L	6.9	7	0.6	3.600	24.84	25	0.994	3.1 ug/l (aquatic life, chronic)	N
Zinc (total recoverable), acute	µg/L	150	7	0.6	3.600	540.0	25	21.60	90 µg/L (aquatic life, acute)	N
Zinc (total recoverable), chronic	µg/L	150	7	0.6	3.600	540.0	25	21.60	80 µg/L (aquatic life, chronic)	N
Whole Effluent Toxicity (chronic)	TUc	500	2	n/a	n/a	n/a	n/a	n/a	≤ 1 TU_c	Y

[1] For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected are included in this analysis.

(2) Conversion from ASWQS, which are expressed in terms of Ammonia-as-NH_3, uses a conversion multiplier equal to the ratio of molecular masses of N to NH_3. This multiplier is 0.822 as expressed in the ASWQS themselves.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in a cannery effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentrations that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

Flow

The upgraded cannery discharge proposal specifies a peak flow (limited due to treatment capacity) of 2.9 million gallons per day ("MGD") and an average flow of 1.87 MGD as the design basis for the proposed upgrades in treatment capacity (StarKist, revised NPDES permit application dated February 11, 2019). Due to the sensitivity of treatment performance to the total flow through the treatment system, as well as the sensitivity of the harbor to overall pollutant loading (which generally increases with flow), based on EPA's best professional judgement a peak flow limit equal to the maximum design flow of the treatment system as proposed by the discharger is appropriate. Continuous flow monitoring is required.

pH

pH is a significant parameter due both to its direct effects on aquatic organisms and the effect that pH has on the chemical form, and resultant toxicity potential, of ammonia (see discussion below). ASWQS specify a pH standard for Pago Pago Harbor based on both a fixed range (minimum of 6.5 and maximum of 8.6) and a peak allowable deviation from natural conditions of 0.2 pH units, where natural is defined as "free of substances or conditions, which are attributable to the activities of man". (ASWQS § 24.0206(m) and § 24.0201). The discharger has not requested a mixing zone allocation for pH, therefore the ASWQS apply at end-of-pipe. Because the ASWQS range (6.5 to 8.6) is narrower than the technology-based ELG (6.0 to 9.0), making both the lower and upper limits more stringent than the ELG, compliance with the ASWQS will also lead to compliance with the ELG. The permit directly implements the ASWQS for Pago Pago Harbor as water-quality-based effluent limits.

Temperature

Temperature can have both direct effects on aquatic organisms and influence the chemical form, and resultant toxicity potential, of ammonia (see discussion below). EPA proposes to retain the pre-existing temperature limits from the 2008 permit (upper limit on monthly average temperature of 90ºF, upper limit on maximum daily temperature of 95ºF).

Total Suspended Solids ("TSS") and Oil & Grease ("O&G")

TSS and O&G are common constituents of cannery effluent which can have harmful effects on aquatic ecosystems through blocking of light and disruption of aquatic biology, respectively. As discussed above in the Technology-Based Limits section, the ELGs at 40 CFR § 408.142 specify TSS and O&G limitations for tuna canneries based on overall production. The derivation of specific limits is discussed in that section. In addition, the permit requires compliance with the narrative ASWQS for solids and oil and grease.

Total Nitrogen ("TN") and Total Phosphorous ("TP")

Nitrogen and Phosphorous are common constituents of tuna cannery effluent which can have several harmful effects on the receiving water, including the fertilization of harmful algal blooms and disruption of aquatic ecosystems. StarKist's analytical laboratory operations were improved in 2015 to comply with required standards, at which time these pollutants were found to be present in the discharge at levels well above permit limits. Measures to address these high discharge levels were initiated under the Consent Decree. Treatment of TN and TP at the permittee's facility continues to be important both due to the discharger's handling of Nitrogen and Phosphorous-rich high-strength fish waste and the sensitivity of the receiving water to these pollutants after the previous level of discharge.

The ASWQS contain specific water-quality-based standards for both TN and TP, defined as concentrations which are not to be exceeded more frequently than 2%, 10%, and 50% (median) of the time. EPA has elected to implement the "median" target as a monthly average permit limitation and the "not more than 10% of the time" limitation as a daily maximum limitation for consistency with the other monitoring and reporting periods established under this permit. Note that the 2014 American Samoa Water Quality Standards Implementation Guidance Manual specifies particular statistical procedures for determining whether the receiving water meets water quality standards (2014 Guidance Manual, section 5.0), but compliance with NPDES permit limits is determined through comparison with the values and averaging periods expressed in the permit itself.

EPA determined the specific TN and TP limits by first applying the 330:1 dilution factor described earlier to these ASWQS values, then multiplying by the projected effluent flow to arrive at a mass-based (pounds per day) limit.

TN effluent limit (mixing-based), monthly average limit as example:

$$\frac{2{,}900{,}000\ gal}{day} \times \frac{3.785\ liters}{gallon} \times \left[\frac{0.2\ mg}{liter}(AS - WQS) \times \frac{330}{1} dilution\right] \times \frac{1\ lb}{453{,}592.4\ mg}$$

$$= 1{,}597\ \frac{lb}{day}\ \text{monthly avg.}\ TN\ \text{limit, rounded to}\ 1600\ lbs/day$$

The same calculation using applicable ASWQS for maximum TN and monthly and maximum TP leads to the following limits for these parameters:

Table 5: Nutrient Effluent Limits based on dilution calculations

Parameter	ASWQS numeric standard for Pago Pago Harbor	Calculated effluent limit at 330:1 Dilution
Total Nitrogen (monthly avg.)	0.2 mg/L (200 µg/L)	1,597 lbs/day, rounded to 1600
Total Nitrogen (daily max.)	0.35 mg/L (350 µg/L)	2,794.9 lbs/day, rounded to 2795
Total Phosphorous (mo. avg.)	0.03 mg/L (30 µg/L)	239.57 lbs/day, rounded to 240
Total Phosphorous (daily max.)	0.06 mg/L (60 µg/L)	479.14 lbs/day, rounded to 480

Ammonia and Ammonia Impact Ratio

Treated and untreated cannery wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process. Due to the potential for ammonia to be present in the cannery wastewater at toxic levels and due to the dynamic and temperature- and pH-dependent conversion of ammonia to nitrate, effluent limitations are established using the Ammonia Impact Ratio ("AIR").

The AIR is calculated as the ratio of the ammonia value in the effluent to the applicable ammonia water quality standard. The ASWQS contain ammonia criteria which are pH- and temperature-dependent (2013 ASWQS appendix A). Therefore, pH, temperature and ammonia sampling must be concurrent. See Attachment E of the permit for a sample log to help calculate and record the AIR values and Attachment F for applicable Water Quality Standards.

The permittee also must monitor and report ammonia effluent values in addition to the AIR value. AIR provides more flexibility than a specific, fixed effluent concentration and is protective of water quality standards since the value is set relative to the water quality standard, with consideration of dilution. If the reported value exceeds the AIR limitation, then the effluent ammonia-N concentration exceeded the ammonia water quality criterion after dilution.

Copper, Zinc and Mercury

The preceding permit incorporated limits on copper, zinc and mercury due to their common occurrence in discharges from canning facilities and to ensure protection of water quality. The Reasonable Potential analysis does not indicate a current potential for exceedance of the applicable criteria; therefore the permit no longer contains limits on these parameters. The permit retains specific monitoring requirements for mercury to ensure protection of, and adequate data collection for, the Pago Pago Harbor mercury TMDL. In addition, copper and zinc will need to be monitored as part of the priority pollutant scans, which will provide information for the next permit reissuance.

Chronic Whole Effluent Toxicity ("WET") Testing

Aquatic life is a public resource protected in surface waters covered by the Clean Water Act. To verify that CWA requirements protecting aquatic life from toxicity are met in surface waters receiving an NPDES discharge, samples are collected from the effluent and tested for toxicity in a laboratory using EPA's WET methods. These results are used to determine if the effluent causes, or has the potential to cause, toxicity to aquatic organisms. Toxicity testing is important because for scores of individual chemicals and compounds, chemical-specific environmentally protective levels for toxicity to aquatic life have not been developed or set as water quality standards. These chemicals and compounds can eventually make their way into effluents and their receiving surface waters. When this happens, toxicity tests of effluents can demonstrate toxicity due to present, but unknown, toxicants (including possible synergistic and additive effects), signaling a water quality problem for aquatic life.

Pursuant to 40 CFR § 122.2, WET is defined as the aggregate toxic effect of an effluent measured directly by a toxicity test. There are two types of WET tests for NPDES effluents: acute and short term chronic. Acute WET methods measure lethality. Chronic WET methods measure a sublethal effect, although some also measure lethality.

EPA's WET methods for acute and chronic toxicity (40 CFR § 136) are systematically-designed instructions for laboratory experiments that expose sensitive life stages of a test species (e.g., fish, invertebrate, algae) to both an NPDES effluent sample and a negative control sample (e.g., uncontaminated surface water or laboratory water). During the toxicity test, each exposed organism can show a difference in biological response. An undesirable biological response includes eggs not fertilized, early life stages that grow too slowly or abnormally, death, etc. At the end of a toxicity test, the biological responses of the organisms in the effluent group and the organisms in the control group are summarized using common descriptive statistics (e.g., sample means, standard deviations, coefficients of variation). The summary statistics of the effluent and control groups are then compared using an applicable inferential statistical approach (i.e., hypothesis testing or point estimate model) chosen by the permitting authority and specified in the NPDES permit. The statistical approach chosen for the permit is compatible with both the experimental design of the EPA WET method and the applicable toxicity water quality standard. Based on this statistical comparison, a toxicity test will demonstrate that the effluent is either toxic or not toxic.

ASWQS section 24.0206(d) provides a narrative water quality standard for toxicity that waters be "…substantially free from substances and conditions or combinations thereof attributable to sewage, industrial wastes, or other activities of man which may be toxic to humans, other animals, plants, and aquatic life or produce undesirable aquatic life." ASWQS section 24.0206(h) specifies that all effluents containing materials attributable to the activities of man shall be considered harmful unless acceptable toxicity tests conducted on the effluent using an EPA WET method show otherwise.

Following 40 CFR § 122.44(d)(1), guidance for determining reasonable potential in chapter 3 of the TSD, and appendix E in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), reasonable potential for chronic toxicity has been established because toxicity levels in the discharge cause and have the reasonable potential to cause exceedances of the applicable water quality standard for toxicity after initial dilution (see Table 4). Thus, a chronic toxicity water-quality-based effluent limit or "WQBEL" (i.e., WET limit) is required for the permitted discharge. No acute toxicity WQBEL or effluent monitoring is required as the chronic toxicity WQBEL is based on a more sensitive biological endpoint (fertilization) than lethality and is considered very likely to protect against acute toxicity.

Following 40 CFR § 122.44(d)(1), in setting the permit's level for chronic WET and conditions for discharge, EPA is using an available short-term chronic WET method/test species at 40 CFR § 136 and an Instream Waste Concentration ("IWC") for the discharge representing the effluent dilution necessary to protect the receiving water's narrative water quality standard for toxicity. EPA has chosen the Test of Significant Toxicity ("TST") statistical approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). The TST null hypothesis for chronic toxicity (H_o) is: IWC mean response (% effluent) ≤ 0.75 Control mean response. The TST alternative hypothesis is (H_a): IWC mean response (% effluent) > 0.75 Control mean response. The TST alternative hypothesis is used to set the chronic toxicity WQBEL in this permit, where the result from a single chronic toxicity test is analyzed using only the TST approach. An acceptable level of chronic toxicity is demonstrated by statistically rejecting the TST null

hypothesis. The TST provides for rejection of the rebuttable presumption that the effluent is harmful (ASWQS § 24.0206(h)).

The required chronic toxicity IWC for the discharge and WQBEL is 0.32 % effluent (1/S × 100), where S is 313, which is carried over from the previous permit and is consistent with the dilution applied to ammonia, which is the suspected primary source of toxicity. For each chronic toxicity test, the permittee is required to report Pass "0" or Fail "1" on the DMR form. Pass "0" constitutes rejection (i.e., statistical fail) and Fail "1" constitutes non-rejection (i.e., statistical pass) of the TST null hypothesis (Ho), at the required IWC (i.e., IWC mean response (0.32 % effluent) ≤ 0.75 × Control mean response). This is determined by following the instructions in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A.

D. Anti-Backsliding

Sections 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1) prohibit the renewal or reissuance of an NPDES permit that contains effluent limits and permit conditions less stringent than those established in the previous permit, except as provided in the statute and regulations. Section 402(o)(3) of the CWA also provides a floor below which such relaxation is prohibited: "In no event may a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation <u>if the implementation of such limitation would result in a violation of the applicable water quality standard</u>, which under this permit are the ASWQS, including its antidegradation and mixing zone provisions.

As discussed above in section VI(A)(4) (Determination of Numeric Effluent Limits), for technology-based effluent limits, the discharge has approximately a 1.5% increase in production (from 600 to ~608.5 tons per day of tuna). 40 CFR § 122.44(l)(1) allows for backsliding of these technology-based effluent limitations (for Total Suspended Solids and Oil & Grease) in the permit because circumstances on which the previous permit were based (i.e., a lower production of processed tuna than are now projected for this new permit term) have materially and substantially changed since the time the existing permit was issued and would have constituted cause for a permit modification under 40 CFR §122.62(a). However, the exceptions in at 40 CFR § 122.44(l) do not apply to the backsliding analysis where the proposed relaxation of an effluent limitation is based on a state water quality standard as relevant here for TN and TP. Accordingly, Section 402(o) of the CWA controls the backsliding evaluation of TN and TP for this permit.

For relaxed permit limits based on State or Territory water standards, like TN and TP, Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits and permit conditions less stringent than those established in the previous permit, except if the relaxed limit is <u>either</u> (1) consistent with Section 303(d)(4) of the CWA (the antidegradation policy) <u>or</u> (2) meets one of the listed exceptions at Section 402(o)(2).

For the water-quality based effluent limits for TN and TP, the discharger has submitted a MZA requesting increased dilution (see Table 3). EPA has partially accommodated this request by increasing limits for the discharge of nitrogen and phosphorous to the receiving water using dilution model inputs and assumptions that are representative of the discharge and receiving water, and protective of ASWQS antidegradation and mixing zone policies.

With the STP cannery no longer operating canning lines, this adjustment maintains permitted total effluent levels of both TN and TP at the joint cannery outfall discharge point at values which would not approach or exceed levels found protective under the combination of the previous StarKist and Chicken of the Sea/ later STP facilities' permits. Therefore, this meets the CWA 303(d)(4) provision allowing backsliding when water quality exceeds that necessary to protect designated use(s) identified for such waters, and as further required under 303(d)(4)(B), meets the requirements of the federal and ASWQS antidegradation policies at 40 CFR § 131.12 and ASWQS § 24.0202, respectively (see next section).

EPA also found no reasonable potential for levels of copper, zinc, and mercury in the discharge to exceed ASWQS based on monitoring data collected after the March 2018 facility upgrades. On these grounds, EPA found that there was not a Reasonable Potential basis to retain limits for these pollutants; however, specific monitoring of mercury was retained due to the existence of a Mercury TMDL for Pago Pago Harbor and copper and zinc will be monitored in the required priority pollutant scans. Removal of these limits due to a finding of no reasonable potential also meets the new information exception to anti-backsliding under CWA 402(o)(2).

E. Antidegradation Policy

EPA's antidegradation policy under CWA Section 303(d)(4) and 40 CFR § 131.12 and American Samoa's antidegradation policy at ASWQS Section 24.0202 require that existing water uses and the level of water quality necessary to protect the existing uses be maintained. The policy also provides that waters whose existing quality exceeds the level necessary to support existing uses shall not be degraded unless and until the EQC finds that the lower water quality is necessary to accommodate important economic or social needs of the Territory.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit includes a mixing zone, which has been set to ensure no degradation of water quality.

The establishment of less stringent water-quality-based effluent limitations is subject to the antidegradation requirements set forth in 40 CFR § 131.12 and Section 24.0202 of ASWQS. As stated above, these regulations require that existing designated uses and the level of water quality necessary to protect the existing uses be maintained. ASWQS antidegradation policy also states that: "…In no event, however, may water quality be degraded to an extent that it would interfere with or become injurious to existing uses."

To ensure protection of existing uses and harbor water quality, EPA has used computer modeling to derive the permit limits for Total Nitrogen and Total Phosphorous. This modeling was conducted with modern software to account for complexities of mixing behavior in Pago Pago Harbor, implemented boundary conditions to account for limited input data, and was constrained not to allow for water-surface mixing in accordance with the ASWQS mixing zone policy. Furthermore, these model-derived limits are at least as protective as the combined total discharge limits allocated when both canneries were discharging through the same Joint Cannery Outfall in the pre-2009 timeframe, and thus allow no further degradation of the receiving water.

Table 6: Comparison of nutrient limits for anti-degradation purposes

Limit	Units	Total Nitrogen (monthly average)	Total Nitrogen (daily maximum)	Total Phosphorous (monthly average)	Total Phosphorous (daily maximum)
2008 StarKist	lbs/day	1200	2100	192	309
New Permit StarKist	lbs/day	1600	2795	240	480
2008 combined	lbs/day	2000	4035	400	580

Based on these factors, the permit retains and revises limits for the above parameters to ensure no degradation of harbor water quality and protection of the designated uses.

To evaluate other potential pollutants, a priority pollutant scan of the effluent demonstrated that most pollutants not already regulated by the permit will be discharged below detection levels.

Therefore, due to application of water quality-based effluent limitations protective of ASWQS, the discharge is not expected to adversely affect receiving water bodies or result in degradation of water quality.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

The ASWQS contain narrative water quality standards applicable to the receiving water at § 24.0206. Therefore, the permit incorporates applicable narrative water quality standards in Part I, section A.3.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data are insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the permit. All monitoring data shall be reported on monthly DMRs and submitted quarterly as specified in the permit. All DMRs are to be submitted electronically to EPA using NetDMR. See also the receiving water monitoring requirements detailed in Part I(E) of the permit, which shall be submitted as electronic attachments to NetDMR submissions.

B. Priority Toxic Pollutants Scan

A Priority Toxic Pollutants scan shall be conducted annually to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. The permittee shall perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the proposed permit or by EPA. 40 CFR § 131.36 provides a complete list of Priority Toxic Pollutants.

C. Whole Effluent Toxicity Testing

The permit establishes effluent monitoring and reporting for chronic toxicity in accordance with both standard conditions for NPDES effluent monitoring at 40 CFR § 122.41 and ASWQS provisions applicable to toxicity monitoring.

Generally, for NPDES samples for WET testing, the sample hold time begins when the 24-hour composite sampling period is completed (or the last grab sample in a series of grab samples is taken) and ends when the sample is tested for WET (initiation of WET test). 40 CFR § 136.3(e) states that the WET method's 36-hour hold time cannot be exceeded unless a variance of up to 72-hours is authorized by EPA. On June 29, 2015, by memorandum, EPA Region 9 authorized a hold time variance of up to 72-hours for Pacific Island Territory permittees which ship the NPDES sample to the continental U.S. for WET testing, with conditions. See WET requirements in the permit and the administrative record.

For this discharge, toxicity tests are used to evaluate a chronic effect (i.e., reduced fertilization) in 0.32 percent (%) effluent to account for authorized dilution (S = 313). The permit requires using a short-term chronic WET method with either the purple urchin, *Strongylocentrotus purpuratus*, or the sand dollar, *Dendraster excentricus.* The WET test result is to be statistically analyzed and reported using the Test of Significant Toxicity ("TST") statistical approach.

IX. SPECIAL CONDITIONS

A. Development of an Initial Investigation TRE Workplan for Whole Effluent Toxicity

In the event effluent toxicity is triggered from WET test results, the permit requires the permittee to develop and implement a Toxics Reduction Evaluation ("TRE") Workplan. The permit also requires additional toxicity testing if a toxicity monitoring trigger is exceeded. Within 90 days of the permit's effective date, the permittee shall prepare and submit a copy of their Initial Investigation TRE Workplan (1-2 pages) for acute and chronic toxicity to EPA for review.

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Consideration of Environmental Justice

EPA's Environmental Justice policy establishes fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. As part of the environmental permitting process, EPA considers cumulative environmental impacts to disproportionately impacted communities.

In American Samoa, EPA is aware of several environmental burdens facing communities including ongoing boil water notices on the local drinking water system, wastewater treatment only to primary standards (not the more typical secondary treatment), runoff from small-scale piggeries and an abundance of cesspools for individual residences.

This permit was written to regulate an industrial source of pollution entering the harbor to ensure it does not adversely impact the water quality of Pago Pago Harbor. In particular, and after careful consideration, EPA has set permit limits equally stringent to those in the preceding permit, with the exception of Nitrogen and Phosphorous (where the overall discharge from both the StarKist and STP canneries together is still restricted to historic levels), metals parameters for which there is no reasonable potential to exceed the applicable WQS, and a 1.5% increase in the production-based limits for TSS and Oil & Grease in line with the applicable Tuna Canning Effluent Limitation Guidelines.

In consideration of the above, EPA believes the permitted discharges should not contribute to undue incremental environmental burden and has made reasonable effort to ensure the community has, at a minimum, the same degree of protection as less burdened communities.

B. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

On July 20, 2018, EPA sent letters to the U.S. Fish and Wildlife Service's Pacific Islands Fish and Wildlife Office ("USFWS"), and the National Marine Fisheries Service NOAA Fisheries Pacific Islands Regional Office ("NMFS"), requesting lists of threatened and endangered species in the vicinity of Pago Pago Harbor. USFWS and NFMS responded to EPA with the following list of species of potential concern:

Species Status	Common Name	Scientific Name
Sea Turtles		
Endangered	Green Sea Turtle, Central south pacific DPS	*Chelonia mydas*
Endangered	Hawksbill sea turtle	*Eretmochelys imbricata*
Sharks		
Threatened	Scalloped hammerhead shark, Indo-West Pacific DPS	*Sphyrna lewini*
Corals		
Threatened	n/a	*Acropora globiceps*
Threatened	n/a	*A. jacquelina*
Threatened	n/a	*A. retusa*
Threatened	n/a	*A. speciose*

Threatened	n/a	*Isopora crateriformis*
Threatened	Branching Frogspawn Coral	*Euphyllia paradivisa*
Candidate Species for Listing (all are giant clams)		
Proposed (as threatened)	Bear Paw Clam	*Hippopus hippopus*
Proposed (as threatened)	China Clam	*H. porcellanus*
Proposed (as threatened)	n/a	*Tridacna costata*
Proposed (as threatened)	Southern Giant Clam	*T. derasa*
Proposed (as threatened)	Giant Clam	*T. gigas*
Proposed (as threatened)	Fluted Giant Clam	*T. squamosa*
Proposed (as threatened)	n/a	*T. tevoroa*

Potential for Effect, by species:

Green Sea Turtle and Hawksbill Sea Turtle (May affect, not likely to adversely affect)

EPA has determined that the Green Sea Turtle and Hawksbill Sea Turtle have at most incidental contact with the discharge from the StarKist cannery, and are unlikely to suffer harmful effects, based on the following considerations:

- Both types of sea turtles have been sighted in the waters around American Samoa and are recorded as having established critical habitat in American Samoa. However, primary habitat for sea turtles includes beaches for nesting, open ocean convergence zones, and coastal areas for benthic feeding. The facility in this permit discharges to deeper water and is not expected to affect these types of habitat.
- No known sightings are recorded in the vicinity of the discharge at 176-foot depth in Outer Pago Pago Harbor.
- If a member of the species were to enter the near vicinity of the discharge and react negatively to any component of the wastewater, both species are sufficiently mobile to depart, or traverse, the maximum affected area within 1-3 minutes. This leaves little time for harmful effects to occur.
- Discharges from the cannery treatment plant are required to meet the ASWQS for the protection of "support and propagation of marine life" based on the applicable beneficial use designation for Pago Pago Harbor.
- Based on a review of recovery plans and available data, EPA is not aware of scientific information or studies documenting negative effects on sea turtles from these types of effluent discharges.

Accordingly, it is EPA's determination that continued wastewater discharge from the cannery under the permit "may affect, but is not likely to adversely affect" the Green Sea Turtle or the Hawksbill Sea Turtle.

Scalloped Hammerhead Shark (No Effect)

EPA has determined that the Scalloped Hammerhead Shark has no nexus with the discharge from the StarKist cannery, beyond the possibility of incidental contact, based on the following considerations:

- No known sightings are recorded in the vicinity of the discharge at 176-foot depth in Outer Pago Pago Harbor. The species is recorded as capable of diving to this depth, but tends to do so when feeding further offshore.
- If a member of the species were to enter the near vicinity of the discharge and react negatively to any component of the wastewater, the species is sufficiently mobile to depart, or traverse, the maximum affected area within 1-2 minutes. This leaves little time for harmful effects to occur.
- Discharges from the cannery treatment plant will meet the ASWQS for the protection of "support and propagation of marine life" based on the applicable beneficial use designation for Pago Pago Harbor.
- Based on a review of recovery plans and available data, EPA is not aware of scientific information or studies documenting negative effects on sharks from these types of effluent discharges.

Accordingly, it is EPA's determination that continued wastewater discharge from the cannery under the permits will have "no effect" on the Scalloped Hammerhead Shark.

Corals (shallow) - *Acropora globiceps, Acropora retusa,* and *Isopora crateriformis*

These three coral species are reported to occur exclusively at depths less than 12 meters. The outfall for the discharge is at 176 feet (about 53.6 meters) and is thus unlikely to directly affect any of the listed species, having a greater than 40-meter depth separation from the discharge point. In the summary sheets for the 2014 listings, the risk factors of ocean warming and acidification are described as particular concerns for the corals with shallow or narrow depth ranges, so the discharge's separation from these species further reduces concern that the discharge could be a contributing stressor to these shallow and particularly sensitive coral species.

Furthermore, NMFS indicated in the July 20 initial response that "it is doubtful that all six species of corals would occur in the proposed action area" and that their local expert in American Samoa is seeking to better characterize which species might be present, or absent, in the action area.

EPA has therefore determined the outfall will have "no effect" on the three threatened corals *Acropora globiceps, Acropora retusa,* and *Isopora crateriformis*, should any be present in Pago Pago Harbor in the vicinity of the outfall.

Corals (deeper) - *Euphyllia paradivisa*, *Acropora jacquelineae,* and *Acropora speciosa*

The other three corals listed as threatened under the ESA warrant closer consideration due to the suspected elevation change behavior of the discharge plume. *Euphyllia paradivisa* favors depths of 2 to 25 meters, while *Acropora jacquelineae* spans 10 to 35 meters depth and *Acropora speciosa* 12 to 40 meters.

While even the deepest-ranging *A. Speciosa* retains more than a 13-meter depth separation from the outfall itself, once discharged the warmer, less dense cannery wastewater has the tendency to rise. This rising plume behavior is typical for wastewater while mixing with, and being diluted by, the receiving water. It is therefore necessary to consider the depths which might be reached by the wastewater plume.

The discharger's 2017 Mixing Zone Application predicts, in its multiple scenarios, that the wastewater plume could climb to a depth as shallow as 29.71 meters (Exhibit 7-4, model run U13b). This would imply a potential to affect *A. jacquelinea* (presence to 35 m) and *A. speciose* (presence to 40 m). However, analysis of receiving water data by AS-EPA have shown effects potentially attributable to the effluent plume (DO depression) at depths as shallow as 60 feet (18 meters). There are sufficient uncertainties in the discharger's modeling assumptions that EPA has conducted an additional analysis to consider the potential effects on *E. paradivisa*, which exists to depths of 25 meters. Even if the plume rises to 18 meters, this still excludes from the affected area the three "shallow" species discussed previously as not ranging below 12 meters.

On the matter of potential effects to the deeper species, the listed coral which ranges closest to the discharge depth and therefore has the highest potential for exposure, *A. speciosa,* is also noted by NOAA as having a broad distribution across the Indo-Pacific region, and the species' abundance was characterized as "common", including confirmation of communities distant from American Samoa in the Pacific Remote Island Areas ("PRIA"). Therefore, should there be any harmful effects in the vicinity of the discharge, these effects would be unlikely to meaningfully impair the species' survival both in American Samoa, and the broader Pacific. Furthermore, the species' broad depth range, incorporating much shallower waters, ensures that members could still thrive in the vicinity of the discharge at unaffected depths.

NMFS indicates that the second-deepest species, *Acropora jacquelineae,* is known to occur from the Philippines to the Solomon Islands, but at the time of listing the only confirmed population within US jurisdiction was in American Samoa. *A. jacquelineae* spans numerous habitat types and depths, giving it resilience to localized acute effects, but appears to favor reef slope and back-reef habitats (NOAA 2014). The discharge from this facility is to the deep mouth of Outer Pago Pago harbor, which appears unlikely to be a favored habitat for this species.

The shallowest of the three "deep" species considered here, *E. paradivisa*, has a depth range (2 m -25 m) which lies primarily outside those depths potentially affected by the discharge (18m +). The species is not yet well surveyed but "likely distributed mostly in the Coral Triangle area (the Philippines to Timor Leste and east to the Solomon Islands)" in addition to the population in

American Samoa. Taking into account NMFS's assertion that "it is doubtful that all six species of corals would occur in the proposed action area" (dated July 20, 2018; see above) and the fact that the few studies conducted on this species characterize its frequency as "rare," the probability of the discharge encountering this species appears low. The potential for impacts is also limited given that a plume which rises ~28 meters (92 feet) between the outfall and the species' deepest habitat depth would likely be quite significantly diluted by its passage through the water column.

It is relevant to reiterate that the ASWQS explicitly exclude reef-flat areas from inclusion in any mixing zone, and therefore the discharge is required to meet, before crossing onto reef-flat area, the ASWQS standards designed to be protective of the "support and propagation of marine life".

For any threatened deeper-water (below 12m) corals which may exist in sufficiently close proximity to the discharge to be affected, the proposed permit remains protective through inclusion of applicable discharge limitations. Wastewater parameters of particular concern for coral habitat include sediment / light occlusion, and nutrient levels which may support algae growth. The permit includes limitations for sediment in the form of total suspended solids, and direct limits for nutrients including nitrogen and phosphorous. These limits implement the ASWQS for Pago Pago Harbor which are designed to be protective of aquatic species in that environment through the designated use of "support and propagation of marine life."

Based on the combination of the above factors, EPA has determined the discharge "may affect, but is not likely to adversely affect" any of the three threatened corals *Euphyllia paradivisa*, *Acropora jacquelineae,* and *A. speciosa* which have the potential to be in proximity to the discharge and within the depths potentially reached by the effluent plume.

Giant Clams proposed for listing

On August 25, 2017, NOAA fisheries announced a proposed rule finding that listing may be warranted for 7 species of giant clams. Based on the 2017 findings, the greatest threats to these species which can be specifically attributed are:

1) Overutilization and overharvesting,
2) International trade in specific species,
3) Climate stressors (for species where specific information is available)
4) Ocean acidification (for species where specific information is available)

In its July 20, 2018 response to EPA's request for a species list, NMFS's expert indicated he "would be surprised if the giant clam is in Pago Pago Harbor in the vicinity of the proposed actions." EPA sought additional information from NMFS staff in American Samoa on the prevalence of giant clams in Pago Pago Harbor on August 6, 2018 and August 15, 2018 and received a response indicating no further information was available.

Based on the information available, EPA notes that of the species of giant clams proposed for listing, not all have geographic ranges which include American Samoa and of these, the deepest-living appears to be *T. derasa* at 20 meters maximum depth (NMFS, 2017). Given the discharge

occurs at a depth of 53.6 meters, or more than 30 meters of separation, overlap of the clams' ranges and the discharge would be minimal.

EPA has therefore determined the outfall will have "no effect" on any giant clams in the vicinity of the outfall which are proposed for listing.

Conclusion

Based on the above lines of evidence, EPA has determined reissuance of the NPDES permit for the StarKist Samoa tuna cannery may affect, but is not likely to adversely affect, the endangered Green Sea Turtle *Chelonia mydas*, the endangered Hawksbill Sea Turtle *Eretmochelys imbricata*, and the threatened coral species *Acropora jacquelineae, Acropora speciose*, and *Euphyllia paradivisa* (also known as Branching Frogspawn Coral). EPA has concluded informal consultation with both USFWS and NMFS and both services have concurred with EPA's conclusion, in letters dated August 15, 2018 and June 5, 2019 respectively. Additionally, EPA provided both services with copies of the draft fact sheet and the draft permit during the public notice period.

C. Impact to Coastal Zones

The Coastal Zone Management Act ("CZMA") requires that federal activities and licenses, including federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR § 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

The American Samoa Coastal Zone Management program, the Department of Commerce, provided a general concurrence for all NPDES permit renewals in American Samoa (June 2010). Therefore, the permittee has demonstrated consistency with the Coastal Zone Management program.

D. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act ("MSA") set forth a number of new mandates for NMFS, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires federal agencies to make a determination on federal actions that may adversely impact Essential Fish Habitat ("EFH").

The permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. Therefore, EPA has determined that the permit will not adversely affect EFH. EPA shared the draft permit with NMFS during public notice and did not receive any comments or concerns regarding EFH.

E. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act ("NHPA") requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA is making a determination that issuing this NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR §§ 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, included as Part III of the permit.

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application. EPA issued a public notice of the draft NPDES permit on July 3, 2019.

B. Public Comment Period (40 CFR 124.10)

Notice of the draft permit will be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued. The public comment period for the draft of this NPDES permit was open from July 3, 2019 thru August 16, 2019, extended at the discharger's request from an initial end date of August 2, 2019.

C. Public Hearing (40 CFR 124.12(c))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision. EPA did not receive a request to hold a public hearing for this permit reissuance.

D. Water Quality Certification Requirements (40 CFR §§ 124.53 and 124.54)

For States, Territories, or Tribes with EPA approved water quality standards, EPA requests certification from the affected State, Territory, or Tribe that the draft permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law. American Samoa EPA provided § 401 certification of this permit on August 29, 2019.

XIII. CONTACT INFORMATION

Comments, submittals, and additional information relating to this permit may be directed to:

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