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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 7, 2009

In Reply Refer To: WTR-7

Taulapapa William Sword, Terminal Engineer
British Petroleum South-West Pacific
P.O. Box PPB
Pago Pago, Tutuila, American Samoa 96799

Re: March 31, 2008 Clean Water Act Inspection

Dear Mr. Sword:

Enclosed is the March 9, 2009 report for our March 31, 2008 inspection of the BP South-West Pacific, American Samoa Terminal. We could not complete this report until now because of incomplete file records. Please submit a short response to the findings in Sections 1 through 4 of this report to EPA and ASEPA, by **May 30, 2009**. The main findings are summarized below:

1 BP South-West Pacific almost never conducted monthly self-monitored as required by the NPDES permit. The sampling itself also is unlikely to be representative of both the storm water drainage and all process wastewaters unrelated to storm events.

2 Wastewater collection, handling, and treatment appear to be well-designed and well-operated. Most notably, all flows discharge through oil water separators valved normally closed. Further controls to minimize the loss of product into the wastewater include adequately sized secondary containment, daily level checking, double bottomed product tanks, tank visual ports, normally closed tank bottom taps, tank bottom visual observation tanks, and self-certification to follow its pollution prevent plan. The treatment and source controls should result in consistent compliance with the NPDES permit. Nevertheless, such a determination cannot be made without representative sampling results.

3 Fully accessible sampling stations should be installed for each of the four oil water separators. Permit required sampling then should be transferred to the individual oil water separators. The sampling frequency can be reduced with documentation of its representativeness.

I appreciate your helpfulness and that of your staff to me during this inspection. We remain available to ASPA and the Territory of American Samoa to assist in any way. Please do not hesitate to call me at (415) 972-3504, or e-mail arthur.greg@epa.gov.

Sincerely,

Greg V. Arthur
CWA Compliance Office

cc: Lt. Matt Vojik, ASEPA



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION

NPDES Permittee: British Petroleum South-West Pacific, Limited
(NPDES Permit No. AS0020028)

Facility: American Samoa Terminal
(Utulei Petroleum Terminal, Fuel Dock, and Tank Farm)
P.O. Box 488, Pago Pago, Tutuila Island, American Samoa

Receiving Water: Pago Pago Harbor

Date of Inspection: March 31, 2008

Inspection Participants:

US EPA: Greg V. Arthur, CWA Compliance Office, (415) 972-3504

ASEPA: LT Matt Vojic (USPHS), ASEPA Acting Director (684) 633-2304

BP South-West Pacific: Taulapapa William Sword, Terminal Manager, (684) 633-5331
Nick King, Assistant Terminal Manager, (684) 633-5331

Report Prepared By: Greg V. Arthur, Environmental Engineer, USEPA Region 9
March 7, 2009



1.0 Scope and Purpose

On March 31, 2008, EPA conducted an NPDES compliance evaluation inspection of the Utulei Petroleum Terminal, Tank Farm, and Fuel Dock (“American Samoa Terminal”), which is operated under lease by British Petroleum (“BP”), South-West Pacific, Limited. The purpose was to ensure compliance with the NPDES permit and applicable Federal regulations covering the discharge of non-domestic wastewaters and storm water run-off into waters of the United States. A secondary purpose was also to identify and verify the conditions to be in future NPDES permits. In particular, it was to ensure:

- Classification in the proper Federal category;
- Application of the correct standards at the correct sampling points;
- Application of effective best management practices;
- Consistent compliance with the standards and best management practices; and
- Fulfillment of Federal self-monitoring requirements.

The American Samoa Terminal is one of the dischargers of storm or industrial wastewater to waters of the United States whose compliance was assessed as part of the evaluations of the NPDES permitted discharges in American Samoa conducted in the past year. Inspection participants are listed on the title page of this report. Arthur conducted the inspection on March 31, 2008.

1.1 Background

The American Samoa Government owns the American Samoa Terminal. The US Navy constructed the terminal and turned over ownership after World War II. BP South-West Pacific operates these assets under lease. BP receives by ship, the product supplies of gasoline, low-sulfur diesel, high-sulfur marine diesel, and jet fuel A-1 at the fuel dock, which is located roughly one kilometer to the west with pipelines leading to the petroleum terminal. Fueling of vessels also occurs at the fuel dock. The terminal itself consists of ten tanks for storage and delivery. The tanks are double-bottomed and roofed. The tank farm and fueling areas are bermed, graded and sized to provide secondary containment.

On March 10, 2003, US EPA issued a revised NPDES permit No. AS0020028 to BP South-West Pacific for three outfall discharges from of the terminal to the harbor and for a fourth outfall discharge from the fuel dock to the harbor. The current permit expired on March 9, 2008 and was administratively extended to remain in effect because BP submitted its permit application more than 180 days before the permit expired. See Section 2.0 for further description of the permit requirements.

1.2 Facility SIC Code

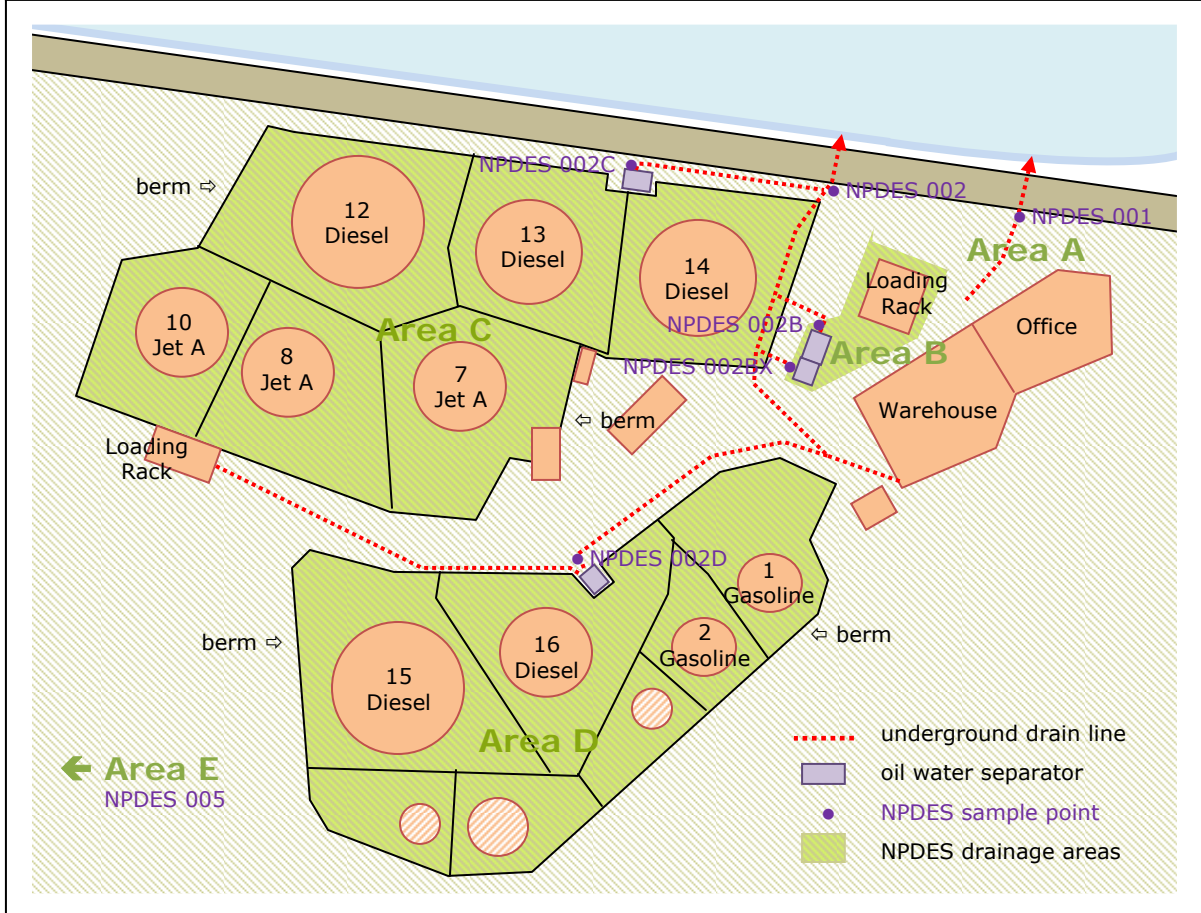
The American Samoa Terminal is assigned the SIC code for facilities engaged in the wholesale distribution of crude petroleum and petroleum products from bulk liquid storage facilities (SIC 5171).



1.3 Facility Description

The American Samoa Terminal operations consists of a main terminal, pipelines, and tank farm, a satellite fuel dock located on the harbor to the west, and a tank farm and pipelines at the airport. See the photo documentation of this inspection in Section 1.6 of this report.

Figure 1.3.1
American Samoa Terminal, Utulei Petroleum Terminal - Layout



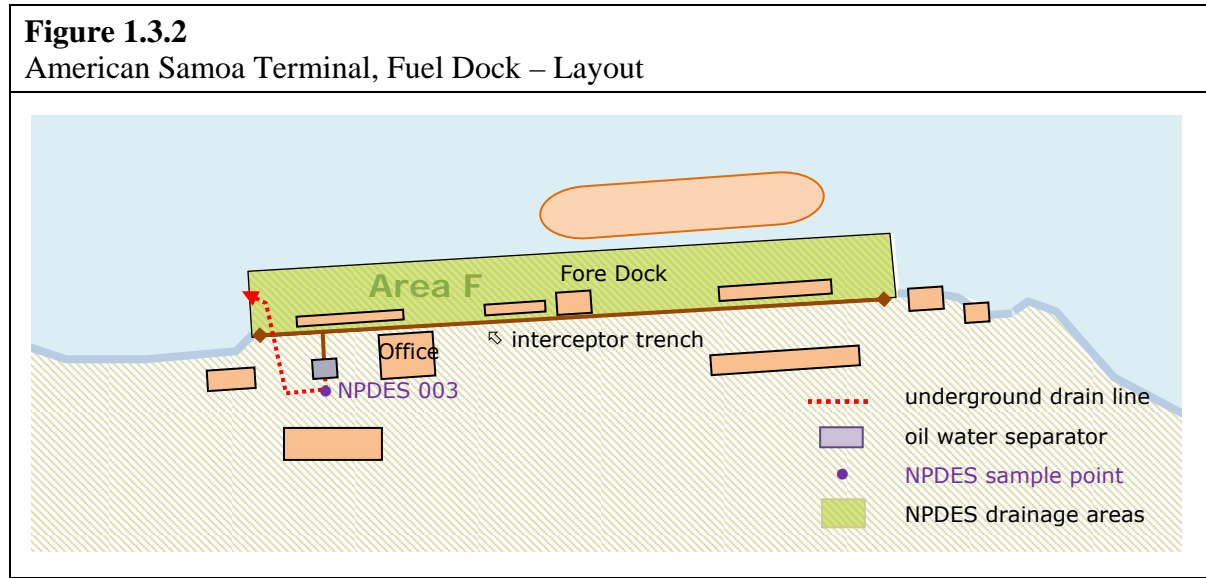
Petroleum Terminal – The operations at the petroleum terminal involve the loading of tanker trucks, the fuel storage for distribution, and the pipeline delivery to and from the fuel dock. There are three drainage areas currently regulated under the NPDES permit for discharge to the harbor. Area B encompasses the bottom fill loading dock and adjacent paving. Area C encompasses six tanks within the concrete berming. Area D encompasses four tanks within the concrete berming and the top fill loading rack. The NPDES permit formerly regulated Area A which encompassed the parking lot and paving around the office, and Area E which encompassed two out-of-service tanks within earthen berms to the west.

Fueling Dock – The operations at the fueling dock involve the unloading of oil tankers and the fueling of marine vessels. There is one drainage area regulated under the NPDES permit for discharge to the harbor. Area F encompasses the fore dock which houses the delivery hose reels and valving within separate and dedicated secondary containment berms. The fore

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dock is sloped to drain to an uncovered interceptor ditch that leads to an oil water separator for discharge under the NPDES permit to the harbor.



Airport Tank Farm – This inspection did not cover the airport tank farm. The June 2003 SPCC plan describes the tank farm as consisting of six tanks within secondary containment berms. The NPDES permit does not include any discharge water from the airport tank farm.

Tank Descriptions – BP South-West Pacific lists in its June 2003 SPCC plan the following petroleum tanks on Tutuila Island.

Table 1.3.3
 Tank Designations - BP South-West Pacific (Petroleum Terminal, Fuel Dock, Airport)

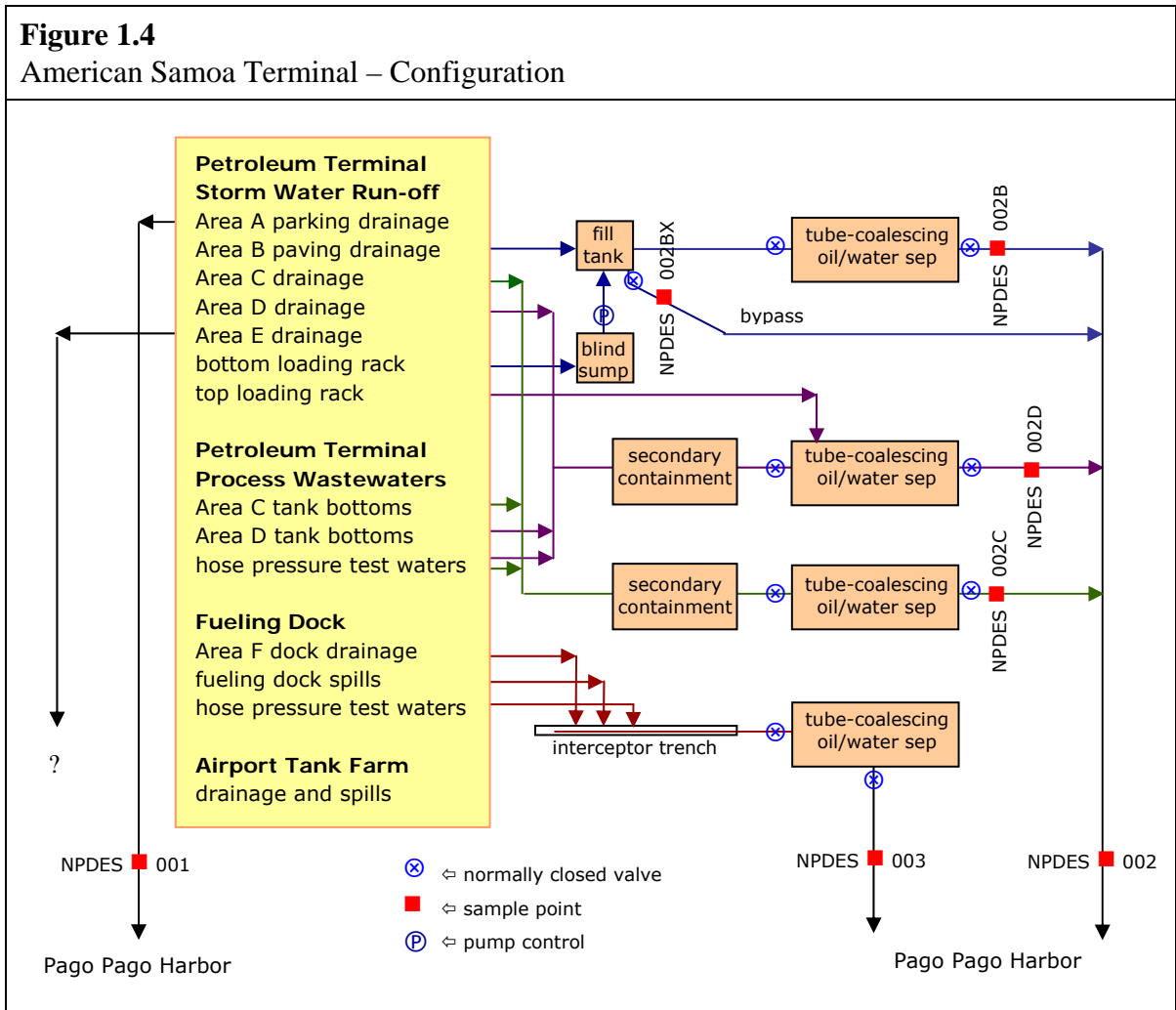
| Tank# | Capacity (gals) | Contents | Tank Design | Drainage |
|-------|-----------------|----------|---|------------|
| 1 | 525,000 | gasoline | fixed external / floating internal roof | NPDES 002D |
| 2 | 525,000 | gasoline | fixed external / floating internal roof | NPDES 002D |
| 7 | 1,041,348 | jet A1 | fixed roof / cone down bottom | NPDES 002C |
| 8 | 1,041,348 | jet A1 | fixed roof / cone down bottom | NPDES 002C |
| 10 | 1,041,348 | jet A1 | fixed roof / cone down bottom | NPDES 002C |
| 12 | 2,280,306 | diesel | fixed roof | NPDES 002C |
| 13 | 1,008,504 | diesel | fixed roof | NPDES 002C |
| 14 | 2,280,306 | diesel | fixed roof | NPDES 002C |
| 15 | 2,236,710 | diesel | fixed roof | NPDES 002D |
| 16 | 1,004,430 | diesel | fixed roof | NPDES 002D |
| A1 | 25,200 | jet A1 | horizontal steel / fixed roof | none |
| A2 | 25,200 | jet A1 | horizontal steel / fixed roof | none |
| A3 | 25,200 | jet A1 | horizontal steel / fixed roof | none |
| A4 | 25,200 | jet A1 | horizontal steel / fixed roof | none |
| A5 | 20,000 | jet A1 | horizontal steel / fixed roof | none |
| A6 | 20,000 | jet A1 | horizontal steel / fixed roof | none |

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1.4 Facility Wastewater Sources, Handling, Control, and Discharge

The BP South-West Pacific operations generate contact and non-contact storm water run-off, tank bottoms condensation, and hose pressure hydrotest waters.



1.4.1 Wastewater Sources

Tank Bottoms – Condensate and entrained waters captured within the product tanks are drained daily in Area C and weekly in Area D to the NPDES discharge points. The tank bottom taps are each outfitted with a locked and normally closed valve. Each tank bottom tap drains to a small capture tank installed over a bermed catch pan, both also valved as normally closed. The tank bottoms are released from the bermed catch pans to the NPDES discharge points after visual observation and log-out tag-out procedures. Tank bottoms would be expected to contain steady levels of free and emulsified petroleum distillates.

Loading Rack Drainage – The top and bottom fill loading racks are used to load 5,000 gallon tanker trucks. BP reconstructed and upgraded the bottom fill loading rack in 2006 to isolate spills, washdown, and drainage from the adjacent paving. It is underlain by floor drains



which lead beyond the rack perimeter to a 6,000 gallon blind sump tank which after visual inspection is pumped to a pre-filler surge tank for the Area B oil water separator. The bottom fill loading rack is covered, and surrounded by berms and raised contouring to minimize storm water run-off into the floor drains. The top fill loading rack is smaller and also bermed to direct all spills and drainage through a floor drain to an underground line leading to the Area D oil water separator. The loading rack spills, washdowns, and drainages would be expected to contain fluctuating levels of free and emulsified petroleum distillates.

Tank Farm Drainage – The secondary containment around the product tanks captures storm water run-off in contact with the tanks or with leaked or spilled product. Storm sewers within the secondary containment areas accept and drain run-off, spills, and released tank bottoms to the Area C and Area D oil water separators. The tank farm drainages would be expected to contain low levels of free and emulsified petroleum distillates.

Fuel Dock Drainage – The fore dock is bermed and sloped to drain to an interceptor trench which leads to the Area F oil water separator. The filler hose reels on the fore dock are also within their own berms with valving as normally closed. Fuel dock drainage would be expected to contain low levels of free and emulsified petroleum distillates.

Hose Pressure Test Water – The filler hoses are pressure tested with water. The hose pressure test tail waters are drained to the oil water separators. Hose pressure test waters would be expected to contain trace levels of free and emulsified petroleum distillates.

1.4.2 Handling, Controls, and Discharge

Source Controls – BP employs operational and design controls to minimize the loss of product into the storm water drainage systems and potentially into the harbor. First, all product tanks are surrounded by adequately sized secondary containment. Second, all product tanks are level checked daily to identify unobserved leaks. BP assigns the Stock Officer the responsibility to explain any losses. Third, all product tanks are double bottomed. Fourth, all product tanks have ports for visual observation. Fifth, all tank bottom taps are valved normally closed, locked, and drained to visual observation tanks and catch pans also valved normally closed. Sixth, the on-site storm water drainage systems discharge through four oil water separators with their inlets, bypasses, and outlets all valved normally closed. Finally, the four oil water separators are each surrounded by secondary containment berming.

Area A Drainage – Storm water run-off from the parking lot and other non-operational paved areas discharges through a storm water culvert to the harbor. The NPDES discharge point is designated in the permit and here as NPDES-001 although non-contact drainages no longer would be under regulation by permit.

Area B Drainage – Spills, washdown, and drainage from the bottom fill loading rack collect into a blind sump tank through floor drains. The sump contents are pumped into a pre-filler surge tank. Storm water run-off from the surrounding paved areas also drain into the surge tank, which is operated to release the collected wastewaters through a tube coalescing oil water separator. There is normally closed valving into and out of the oil water separator and



out through a bypass line. The Area B oil water separator discharges to a storm water culvert leading to the harbor, which is designated in the permit and here as NPDES-002. The oil water separator effluent is designated in this report as NPDES-002B. The oil water separator bypass line is designated in this report as NPDES-002BX.

Area C Drainage – Spills, tank bottoms, storm water run-off, and drainage from Area C collect within secondary containment. The wastewaters drain through a tube coalescing oil water separator. There is normally closed valving into and out of the oil water separator. The Area C oil water separator discharges to a storm water culvert leading to the harbor. The oil water separator effluent is designated in this report as NPDES-002C.

Area D Drainage – Spills, tank bottoms, storm water run-off, and drainage from Area D collect within secondary containment. The wastewaters from Area D and the top fill loading rack drain through a tube coalescing oil water separator. There is normally closed valving into and out of the oil water separator and out through a bypass line. The Area D oil water separator discharges to a storm water culvert leading to the harbor. The oil water separator effluent is designated in this report as NPDES-002D.

Area E Drainage – Storm water run-off from the decommissioned Area E discharges to a stream leading to the harbor. The discharge point was designated in the permit as NPDES - 005 but no longer is referenced since non-contact drainages are unregulated.

Area F Drainage – Spills, storm water run-off, and drainage from the fore dock collect within secondary containment to an interceptor trench. The collected wastewaters are released through a tube coalescing oil water separator. There is normally closed valving into and out of the oil water separator which discharges to the harbor. The oil water separator effluent is the NPDES discharge point, designated in the permit and here as NPDES-003.

1.5 Photo Documentation

The single digital photograph taken during this inspection is depicted here in this section. This photograph is saved as *samoa-petrolterminal-01.jpg*.



Photo #1: BP South-West Pacific
Taken By: Greg V. Arthur
Date: 03/31/08



2.0 NPDES Permit Requirements

- *The NPDES permit must apply Federal BAT/NSPS standards to all regulated sources and the American Samoa water quality standards to the discharge to the ocean.*

Summary

The NPDES permit authorizes the discharge to the storm water culverts leading to the harbor of process wastewaters and storm water drainage through four oil water separators. The permit establishes discharge limits that apply American Samoa water quality standards for oil and grease, pH, and a few narrative receiving water limits. Storm water discharges from non-operational areas through two other discharge points are identified as non-contact and no longer covered under the NPDES permit. The NPDES permit also requires BP South-West Pacific to implement a pollution prevention plan, which upon approval then becomes an enforceable condition of the permit. See Sections 2.3, 2.4 and 2.5 for NPDES permit discharge limits, and narrative requirements.

Requirements

- The permit must establish self-monitoring schedules that account for both the storm water discharges and the industrial process wastewaters (*tanks bottoms, hose pressure test*).

Recommendations

- The permit should require self-monitoring of the tank farm oil water separator outlets (NPDES-002B,-002BX,-002C,-002D) instead of the tank farm outfall (NPDES-002).

2.1 Permit Applicability

NPDES Permit AS0020028 was issued to become effective on March 10, 2003 and to expire on March 9, 2008. This version is administratively extended since BP South-West Pacific submitted an application for permit renewal on September 7, 2007, more than 180 days before the expiration date. The NPDES permit applies American Samoa water quality standards to process wastewaters and storm water drainages. The permit authorizes discharge through three outfalls, two at the tank farm and one at the fuel dock, designated in the permit and this report as the sample points NPDES-001, NPDES-002 and NPDES-003. Discharges from Area A through NPDES-001 and from Area E are now considered to be entirely of non-contact storm water, and thus authorization for discharge under permit is no longer needed.

2.2 Federal BAT/NSPS Categorical Standards

No Federal categorical standards apply to the American Samoa Terminal. The Federal standards in 40 CFR 419 do not apply to fuel tank farms and fueling stations but rather to petroleum refineries.



2.3 Effluent Discharge Limits

The NPDES permit applies American Samoa water quality standards limits to the wastewater discharges from American Samoa Terminal to the harbor, designated in this report as the sample points NPDES-001, NPDES-002 and NPDES-003.

| Table 2.3 NPDES Permit - Discharge Standards and Limits ① | | | | | |
|---|-------------------------|-----------|-----------|-----------|-------------|
| AS0020028 §I.A and §I.B | NPDES-001 and NPDES-002 | | NPDES-003 | | Sample Type |
| | d-max | frequency | d-max | frequency | |
| flow (mgd) | ② | monthly | ② | monthly | estimate ③ |
| oil+grease (mg/l) | 15.0 | monthly | 15.0 | monthly | grab |
| benzene (µg/l) | ② | yearly | - | - | grab |
| ethylbenzene (µg/l) | ② | yearly | - | - | grab |
| toluene (µg/l) | ② | yearly | - | - | grab |
| lead (µg/l) | ② | yearly | - | - | grab |
| pH-min/max (s.u.) | 6.0 - 8.6 | monthly | 6.5 - 8.6 | monthly | field grab |
| turbidity (NTU) | ② | quarterly | - | - | field grab |

① See Table 4.2 on page 15 for a recommended schedule for self-monitoring.
 ② Monitoring only – No limits.
 ③ Estimations involve the 24-hour rainfall amount, surface area, and a soil adsorption factor.

2.4 Receiving Water Limits

The NPDES permit applies American Samoa water quality standards as narrative receiving water limits for the discharge to the harbor, but does not require the self-monitoring of the receiving waters.

| Table 2.4 NPDES Permit - General Receiving Water Prohibitions | |
|---|---|
| §I.A,B | Discharges to the harbor of process wastewaters and contact storm water drainages are authorized only from two tank farm outfalls and the fuel dock oil water separator. |
| §I.C.1,3 | Discharges shall not impart petroleum products in amounts that result in visible film, sheen, or discoloration, or form oil deposits on the harbor shores or bottom. |
| §I.C.2 | Discharges shall not impart petroleum products in amounts that cause damage to the biota, or objectionable degradation of water quality. |
| §I.D | Discharges shall not have substances in amounts sufficient to produce objectionable color, turbidity, odor, or taste in the harbor or biota. |
| §I.E | Discharges shall be free from substances and conditions ... which are toxic to humans, animals, plants, and aquatic life, or interfere with any beneficial use of the harbor. |
| §I.F | Discharges shall be free from substances which produce undesirable aquatic life. |
| §I.G | Discharges shall not cause the temperature in the harbor to vary by more than 1.5°F from ambient conditions. |



2.5 Pollution Prevention Plan

The NPDES permit requires the development and implementation of a pollution prevention plan as an enforcement element of the permit (Permit Condition §IV). The July 2003 plan for the American Samoa Terminal established a number of site-specific best management practices (“BMPs”) pertinent to the water quality of discharges from the facility.

| Figure 2.5 NPDES Permit - Pollution Prevention Plan BMPs | |
|--|--|
| §IV.C(1) | Fueling and fuel transfer areas are paved, curbed, and within secondary containment. Load racks are covered. Topping off is prevented by back pressure nozzles and mandatory operator monitoring. Spills are cleaned with only solid adsorbent. |
| §IV.C(2) | Vehicle washing is contained to drain to the Area B oil water separator, is limited to weekly washes, and involves biodegradable and non-dispersing cleaning agents. |
| §IV.C(3) | Vehicle and equipment maintenance occurs only in a covered maintenance shop. It involves daily tanker truck inspections, daily shop clean-up, segregated waste fluids collection, the use of drip pans, solid adsorbent clean-up without water wash down, and daily storm drain inlet inspections. |
| §IV.C(4) | Scrap is collected into covered trash bins. Yard clean-up occurs daily. Used oil is sent to ASPA for reclaim. Left over paint is hardened before land disposal. Sludge is collected for off-island shipment. Used batteries are sent for off-site recycling. |
| §IV.C(5) | Hazardous wastes are stored in RCRA labeled drums under roof cover. Trash bins are labeled by content. Signs are posted about spills and unauthorized dumping. |
| §IV.C(6) | Fuel storage areas are sealed, curbed, and not made of asphalt to provide secondary containment. Spills are promptly clean-up. Absorbent pads are kept in stock. |
| §IV.C(7) | Paints and solvent mixing are to be contained within secondary containment. |
| §IV.C(8) | Measures will be implemented to minimize soil erosion. |
| §IV.C(9,10) | Tank bottoms and hose pressure test tail waters are not released to the ground but rather through treatment for discharge. Seepage into fuel tanks is prevented. |
| §IV.E(1) | Employees and subcontractors are trained to understand the BMPs. |
| §IV.E(2) | Weekly visual inspections by checklist are conducted to ensure all aspects of the BMPs are properly carried out. Deficiencies generate incident reports. |

2.6 Permit Self-Monitoring Requirements

The permit does not limit self-monitoring to storm water drainages but it does imply that sampling is to occur in response to storm events since the flow estimates are based on the amount of rainfall. However, the permit self-monitoring does not explicitly account for the process wastewaters (*tank bottoms, hose test waters*) since they are generated irrespective of storm events. The permit also designates the tank farm outfall as the point of compliance for discharge from the tank farm. It would be better to determine compliance at the control points, where BP South-West Pacific no longer has control of the discharge. These control points are the outlets from each of the oil water separators. See Figure 1.3.1 on page 3.



3.0 Compliance with NPDES Permit Requirements

- *Industrial and storm water discharges are authorized into the harbor from just two tank farm outfalls and the fuel dock oil water separator. [NPDES Permit §I.A and I.B]*
- *Industrial waste and storm water discharges must comply with the NPDES permit discharge limitations set forth as the application both of Federal standards and American Samoa water quality standards. [NPDES Permit §I.A and I.B]*
- *Industrial waste and storm water discharges must not result in adverse impacts in the receiving waters as defined by narrative standards. [NPDES Permit §I.C through I.G]*
- *The facility must develop and implement BMPs designed to control pollutants entering surface waters. [NPDES Permit §I.C, I.D, and I.E]*

Summary

For two reasons, it cannot be determined that BP South-West Pacific consistently complies with its NPDES permit. First, self-monitoring was not conducted as often as required under the permit. Second, the self-monitoring that was required by the permit does not account for process wastewaters unrelated to storm events. As a result, while the tube coalescing oil water separators are designed to remove the petroleum distillate pollutants found in fueling station wastewaters and drainage, their removal efficiencies and treatment capacities cannot be determined. BP was found on this inspection to be clean and well run, employing of a number of operational and design controls to minimize the loss of product into the wastewater. These include adequately sized secondary containment, daily level checking, double bottomed product tanks with visual ports, normally closed tank bottom taps, and tank bottom visual observation tanks. BP also consistently certified to following its pollution prevention plan. The treatment in-place and the built-in and preventive source controls should be able to ensure consistent compliance with the NPDES permit, but such a determination cannot be made without representative sampling results.

Requirements

- None.

Recommendations

- None.

3.1 Sampling Record

BP South-West Pacific ceased monthly self-monitoring in 2007-2008 and rarely collected samples in the three years prior. As a result, the sample record over the life of the permit consists of just four samples for NPDES-001 and NPDES-002 and five samples for NPDES-003, during storm events covering the estimated discharge flowrates, oil and grease, pH, turbidity, lead, benzene, ethylbenzene, and toluene. See Table 3.1 on the next page for the



2004-2008 sampling results. Also see Table 4.1 on page 14 of this report for a summary of the failure to sample.

Table 3.1

NPDES Permit – Self-Monitoring Results for 2004 through 2008

| NPDES-001 | flow est (gpd) | oil+grease (mg/l) | turbidity (NTU) | pH (su) | lead (mg/l) | benzene (mg/l) | ethylbnz (mg/l) | toluene (mg/l) |
|----------------------------|----------------|-------------------|-----------------|---------|-------------|----------------|-----------------|----------------|
| 01/13/06 | 44281 | <1.0 | 1.69 | 7.8 | <0.005 | <0.001 | <0.001 | <0.001 |
| 09/28/05 | 149600 | 1.21 | 6.74 | 8.2 | <0.005 | <0.001 | <0.001 | <0.001 |
| 10/14/04 | 119680 | <1.0 | <1.0 | 6.9 | <0.005 | <0.001 | <0.001 | <0.001 |
| 03/25/04 | 128656 | <1.0 | 4.67 | 7.7 | <0.005 | <0.001 | <0.001 | <0.001 |
| mean (μ) | 110629 | 0.49 | 3.46 | 7.7 med | <0.005 | <0.001 | <0.001 | <0.001 |
| std dev (σ_{n-1}) | 45782 | 0.48 | 2.75 | - | - | - | - | - |
| 99th% ($Z_{99\%}$) | 217301 | 1.61 | 9.87 | - | - | - | - | - |
| minimum | 44281 | <1.0 | <1.0 | 6.9 | <0.005 | <0.001 | <0.001 | <0.001 |
| maximum | 149600 | 1.21 | 6.74 | 8.2 | <0.005 | <0.001 | <0.001 | <0.001 |

| NPDES-002 | flow est (gpd) | oil+grease (mg/l) | turbidity (NTU) | pH (su) | lead (mg/l) | Benzene (mg/l) | ethylbnz (mg/l) | toluene (mg/l) |
|----------------------------|----------------|-------------------|-----------------|---------|-------------|----------------|-----------------|----------------|
| 01/13/06 | 1571197 | <1.0 | 0.55 | 6.7 | <0.005 | <0.001 | <0.001 | <0.001 |
| 09/28/05 | 531080 | <1.0 | 2.26 | 8.4 | <0.005 | <0.001 | <0.001 | <0.001 |
| 10/14/04 | 424864 | <1.0 | <1.0 | 7.2 | <0.005 | <0.001 | <0.001 | <0.001 |
| 03/25/04 | 456728 | <1.0 | 1.13 | 7.9 | <0.005 | <0.001 | 1.14 | 1.08 |
| mean (μ) | 745967 | <1.0 | 1.17 | 7.6 med | <0.005 | <0.001 | 0.29 | 0.27 |
| std dev (σ_{n-1}) | 551950 | - | 0.76 | - | - | - | 0.57 | 0.54 |
| 99th% ($Z_{99\%}$) | 203201 | - | 2.95 | - | - | - | 1.61 | 1.53 |
| minimum | 424864 | <1.0 | <1.0 | 6.7 | <0.005 | <0.001 | <0.001 | <0.001 |
| maximum | 1571197 | <1.0 | 2.26 | 8.4 | <0.005 | <0.001 | 1.14 | 1.08 |

| NPDES-003 | flow est (gpd) | oil+grease (mg/l) | turbidity (NTU) | pH (su) | lead (mg/l) | benzene (mg/l) | ethylbnz (mg/l) | toluene (mg/l) |
|----------------------------|----------------|-------------------|-----------------|---------|-------------|----------------|-----------------|----------------|
| 01/13/06 | 221408 | <1.0 | - | 6.5 | - | - | - | - |
| 09/28/05 | 74800 | <1.0 | - | 8.4 | - | - | - | - |
| 12/09/04 | 86020 | 1.10 | - | 8.0 | - | - | - | - |
| 10/14/04 | 112280 | <1.0 | - | 8.8 | - | - | - | - |
| 03/25/04 | 64328 | <1.0 | - | 8.0 | - | - | - | - |
| mean (μ) | 111767 | 0.38 | - | 8.0 med | - | - | - | - |
| std dev (σ_{n-1}) | 63838 | 0.40 | - | - | - | - | - | - |
| 99th% ($Z_{99\%}$) | 260511 | 1.32 | - | - | - | - | - | - |
| minimum | 64328 | <1.0 | - | 6.5 | - | - | - | - |
| maximum | 221408 | 1.10 | - | 8.8 | - | - | - | - |



4.0 Compliance with Self-Monitoring Requirements

- *The facility must self-monitor its discharges to the harbor at least once per month, as well as conduct visual inspections of the BMPs. [NPDES Permit §I.A, I.B, and I.E]*
- *Samples must be representative of the sampling period. Sampling must be representative of the conditions occurring during the reporting period. [40 CFR 122.41(j)]*

The sample record for BP South-West Pacific both is incomplete and unlikely to be representative of discharges to the harbor. In particular, BP rarely collected monthly samples as required by the permit. Moreover, although the limited sample record registers pollutant concentrations well below limits, establishing that storm related discharges do not need to be frequently sampled, for many reasons, sampling as currently conducted is unlikely to account for storm water run-off and process wastewaters unrelated to storm events. As a result, the sampling requirements must apply to two separate conditions, (1) when storm water discharges through the oil water separators, and (2) when tank bottoms and hose pressure test waters are released for discharge through the oil water separators.

Requirements

- All storm related and non-storm related discharges to the harbor must be sampled at least once during each three-month permit reporting period.

Recommendations

- See Table 4.2 on page 15 of this report for the self-monitoring requirements that would be considered to be representative of the discharges from the American Samoa Terminal.
- Sampling stations should be installed after each oil water separator to allow accessible and representative self-monitoring.
- The date and volume of all process wastewater discharges unrelated to storm events should be recorded and reported with the quarterly discharge monitoring reports.

4.1 Permit Requirements

BP South-West Pacific did not submit monthly sample results. Samples were collected and reported for the three outfalls on just five occasions in the five years between 2004-2008, even though the permit requires monthly sampling and quarterly reporting. BP explained the failure to sample with the following statement provided in the discharge monitoring report cover letters.

... no samples were taken due to low flow or schedule conflicts (confined space permit required now to take samples from oil water separator sample points.)

Over the past five years, BP failed to collect samples and report results from NPDES-002 and NPDES-003, each on at least 56 occasions, and from NPDES-001 on at least 32 occasions



(through completion of the rebuilt bottom fill loading dock by 2007). The discharge monitoring reports were submitted in every quarter except one as required by the permit. These reports appropriately included the required self-certifications to have followed its pollution prevention plans. It cannot be determined from the submitted records whether the samples were correctly collected or if the appropriate chain-of-custody procedures were followed.

| Table 4.1 | | | | | | | | | |
|---|-----------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|
| BP South-West Pacific - Self-Monitoring Record for 2004 through 2008 | | | | | | | | | |
| Sample Dates | NPDES 001 | NPDES 002 | NPDES 003 | Plan Cert | Sample Dates | NPDES 001 | NPDES 002 | NPDES 003 | Plan Cert |
| Dec 2008 | - | NS | NS | ✓ | Jun 2006 | NS | NS | NS | ✓ |
| Nov 2008 | - | NS | NS | ✓ | May 2006 | NS | NS | NS | ✓ |
| Oct 2008 | - | NS | NS | ✓ | Apr 2006 | NS | NS | NS | ✓ |
| Sep 2008 | - | NS | NS | ✓ | Mar 2006 | NS | NS | NS | ✓ |
| Aug 2008 | - | NS | NS | ✓ | Feb 2006 | NS | NS | NS | ✓ |
| Jul 2008 | - | NS | NS | ✓ | Jan 2006 | 01/31 | 01/31 | 01/31 | ✓ |
| Jun 2008 | - | NS | NS | ✓ | Dec 2005 | NS | NS | NS | ✓ |
| May 2008 | - | NS | NS | ✓ | Nov 2005 | NS | NS | NS | ✓ |
| Apr 2008 | - | NR | NR | NR | Oct 2005 | NS | NS | NS | ✓ |
| Mar 2008 | - | NR | NR | NR | Sep 2005 | 09/28 | 09/28 | 09/28 | ✓ |
| Feb 2008 | - | NR | NR | NR | Aug 2005 | NS | NS | NS | ✓ |
| Jan 2008 | - | NS | NS | ✓ | Jul 2005 | NS | NS | NS | ✓ |
| Dec 2007 | - | NS | NS | ✓ | Jun 2005 | NS | NS | NS | ✓ |
| Nov 2007 | - | NS | NS | ✓ | May 2005 | NS | NS | NS | ✓ |
| Oct 2007 | - | NS | NS | ✓ | Apr 2005 | NS | NS | NS | ✓ |
| Sep 2007 | - | NS | NS | ✓ | Mar 2005 | NS | NS | NS | ✓ |
| Aug 2007 | - | NS | NS | ✓ | Feb 2005 | NS | NS | NS | ✓ |
| Jul 2007 | - | NS | NS | ✓ | Jan 2005 | NS | NS | NS | ✓ |
| Jun 2007 | - | NS | NS | ✓ | Dec 2004 | 12/09 | NS | NS | ✓ |
| May 2007 | - | NS | NS | ✓ | Nov 2004 | NS | NS | NS | ✓ |
| Apr 2007 | - | NS | NS | ✓ | Oct 2004 | 10/14 | 10/14 | 10/14 | ✓ |
| Mar 2007 | - | NS | NS | ✓ | Sep 2004 | NS | NS | NS | ✓ |
| Feb 2007 | - | NS | NS | ✓ | Aug 2004 | NS | NS | NS | ✓ |
| Jan 2007 | - | NS | NS | ✓ | Jul 2004 | NS | NS | NS | ✓ |
| Dec 2006 | NS | NS | NS | ✓ | Jun 2004 | NS | NS | NS | ✓ |
| Nov 2006 | NS | NS | NS | ✓ | May 2004 | NS | NS | NS | ✓ |
| Oct 2006 | NS | NS | NS | ✓ | Apr 2004 | NS | NS | NS | ✓ |
| Sep 2006 | NS | NS | NS | ✓ | Mar 2004 | 03/25 | 03/25 | 03/25 | ✓ |
| Aug 2006 | NS | NS | NS | ✓ | Feb 2004 | NS | NS | NS | ✓ |
| Jul 2006 | NS | NS | NS | ✓ | Jan 2004 | NS | NS | NS | ✓ |

NS - No sample results reported. NR - No report submitted.



4.2 Representativeness of Sampling

Sampling Points - The outlets (NPDES-002B/BX,-002C,-002D,-003) from the four oil water separators together account for all process wastewaters and storm water drainages. While the current permitted sample points, (NPDES-002,-003) can do the same, the combined outfall at NPDES-002 (1) could carry unregulated storm water from non-process and off-site areas, and (2) was rarely self-monitored due to the sampling difficulty posed by low flows.

Sampling Period - The sample record is likely to be representative of treated storm water drainage to the harbor over a sampling day even though the permit allows for instantaneous grab sampling of the regulated pollutants. It is possible that treated storm water drainage would be higher in pollutant strength during the first flush at the start of a storm event. However, storm events occur with such frequency in American Samoa that there is little chance for pollutants to accumulate over a sustained length of time which means the first flush is unlikely to be significantly different in strength than drainages at any other time.

Reporting Period - The sampling is not on a set schedule nor conducted frequently enough to result in a sample record representative of all discharges over the three-month reporting period required by the permit. In particular, the sampling as required by the permit does not explicitly account for any discharge of the process wastewaters unrelated to storm events. Tank bottoms consist of condensate and ballast waters in direct contact with petroleum distillate products. There are ten fuel storage tanks in service each of which is a source of tank bottom discharges to the harbor. The sampling over every three month reporting period must account for these ten non-storm-related process wastewaters, as well as hose pressure test waters and storm water drainage from the four drainage basins.

Table 4.2
NPDES Permit – Recommended Self-Monitoring Requirements

| Self-monitoring Frequency | NPDES 001 | ② NPDES 002B/BX | ② NPDES 002C | ② NPDES 002D | NPDES 003 | Sample Type |
|---------------------------|-----------|-----------------|--------------|--------------|-----------|--------------|
| flow (mgd) ① | - | quarterly | quarterly | quarterly | quarterly | estimate③ |
| oil+grease (mg/l) | - | quarterly | quarterly | quarterly | quarterly | grab |
| benzene (µg/l) | - | ⑥ | ⑥ | ⑥ | ⑥ | grab |
| ethylbenzene (µg/l) | - | ⑥ | ⑥ | ⑥ | ⑥ | grab |
| toluene (µg/l) | - | ⑥ | ⑥ | ⑥ | ⑥ | grab |
| lead (µg/l) | - | yearly | yearly | Yearly | yearly | grab |
| pH-min/max (s.u.) | - | quarterly | quarterly | quarterly | quarterly | field grab |
| turbidity (NTU) | - | quarterly | quarterly | quarterly | quarterly | field grab |
| process wastewaters ④ | - | quarterly | quarterly | quarterly | quarterly | report only |
| pollution prevent plan ⑤ | - | quarterly | quarterly | quarterly | quarterly | self-certify |

① Self-monitoring only – No limits.

② **Additional samples required of the process wastewaters unrelated to storm events.**

③ Estimations involve the 24-hour rainfall amount, surface area, and a soil adsorption factor.

④ List dates and volumes of all process wastewater discharges unrelated to storm events.

⑤ Self-certify to have followed the approved pollution prevention plan.

⑥ Once per life-of-permit pollutant scans in order to identify changes in discharge quality.