CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2007-0082

REVISED SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER NO. R2-2002-0013 FOR:

CHEVRON PRODUCTS COMPANY
EQUILON ENTERPRISES LLC
OAKLAND FUEL FACILITIES CORPORATION
PS TRADING, INC.
SHELL OIL COMPANY
SWISSPORT FUELING, INC.
SFPP, L.P., an operating partner of KINDER MORGAN ENERGY PARTNERS L.P.
PORT OF OAKLAND

for the property located at

1 EDWARD WHITE WAY
OAKLAND
ALAMEDA COUNTY

also known as

SOUTH FIELD TANK FARM
OAKLAND INTERNATIONAL AIRPORT

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Water Board), finds that:

1. **Site Location:** The South Field Tank Farm ("SFTF") is located along the southeastern edge of the Oakland International Airport in the City of Oakland (Figure 1). The SFTF area occupied by tank farms and a fuel transfer station is about seven acres and is located next to the San Francisco Bay ("Bay"). The surrounding areas are commercial and industrial.

   SFTF consists of one active fuel storage and distribution terminal, referred to as Tank Farm S, two inactive terminals referred to as Tank Farm C, and the Humble/PS Trading Tank Farm, and one active fuel transfer station referred to as the SFPP, L.P., Oakland Airport Transfer Station. Each terminal and the SFPP, L.P., Oakland Airport Transfer Station are bordered by dikes around stormwater retention basins on at least two sides. Parts of the stormwater retention basins at SFTF also qualify as jurisdictional, non-tidal wetlands under Section 404 of the Clean Water Act. Figure 2 shows the approximate relationship between

the three terminals, the SFPP, L.P., Oakland Airport Transfer Station, the retention basins, and the Bay**.**

The Bay is adjacent to the main dike that runs along the southern edge of the SFTF. Several companies operate petroleum pipelines between the southern edge of the SFTF and the Bay. These pipelines are above grade between the SFPP, L.P., Oakland Airport Transfer Station, located immediately south of Tank Farm C and the southwest corner of Tank Farm S at Neil Armstrong Way. Several of the pipelines turn north along Neil Armstrong Way and head into Tank Farm S below grade.

2. Site History: The Port of Oakland ("Port") owns the individual fuel storage and distribution terminals within the SFTF, and has leased them to various operators. During the period of time that the Port has owned the property, several documented releases of fuel have occurred in Tank Farm S, Tank Farm C, and the Humble/PS Trading Tank Farm.

a. Tank Farm S

Tank Farm S is currently in operation and contains four jet A fuel aboveground storage tank ("AST") with a combined storage capacity of 2.94 million gallons. Swissport Fueling, Inc. ("Swissport") operates this tank farm on behalf of Oakland Fuel Facilities Corporation ("OFFC"), which has operated at the SFTF since 1989. The four jet fuel ASTs have the following capacities: Tank No. 250 – 420,000 gallons; Tank No. 251 – 420,000 gallons; Tank No. 252 – 1,050,000 gallons; and Tank No 253 – 1,050,000 gallons. Piping integral to the tanks is located within the boundaries of Tank Farm S and terminates at an outlet filter area. Tank Farm S also includes a meter proving rack, a 1,000-gallon double walled AST which stores diesel for use in an emergency generator, an incoming filter bank, with 1,000-gallon and 4,000-gallon cathodically protected underground steel tanks, a 1,600-gallon concrete oil-water separator, and a former outbound pump and filter area. Fueling Maintenance Company ("FMC") was a general partnership that operated Tank Farm S between approximately 1983 and 1989 including a period between December 1983 and September 1984 when two spills of jet fuel totaling approximately 39,000 gallons occurred. There are currently seven active and/or inactive underground fuel pipelines within or adjacent to Tank Farm S along Neil Armstrong Way; in addition there is one active aboveground pipeline on Tank Farm S entering the site along its southern boundary. Equilon has owned the Bay Crossing Line, an active underground fuel pipeline, since 1998. A portion of the pipeline appears to be the source of a release of oxygenated gasoline to soil and groundwater within Tank farm S.

b. Tank Farm C

Tank Farm C contained three out-of-service welded field constructed steel ASTs that were constructed in 1969 by Standard Oil Company, the predecessor to Chevron Products Company ("Chevron"). This site was leased by the Port of Oakland ("Port") to Standard Oil Company from 1970 through late 1983, at which time the facilities were sold to the Port. The tank farm was last used in approximately 1989. All ASTs and associated equipment were removed during site demolition activities in September and October 2007. The three ASTs had the following capacities: Tank No. 1 – 630,000 gallons, Tank No. 2 – 126,000

gallons; and Tank No. 3 – 252,000 gallons. The Tank Farm C area also contained a 500-gallon concrete underground waste sump immediately south of the Tank Farm C secondary containment area and a 1,000-gallon underground storage tanks (UST), supposedly used for the storage of waste jet A fuel and motor oil. This site also contained a number of aboveground and underground fuel lines connecting to the ASTs, a filter system, and a pump pad. There were two underground pipelines on this site; one pipeline entered the site from the adjacent SFPP, L.P., Oakland Airport Transfer Station and one pipeline provides outgoing fuel. The pipelines were operated until October 1989 when the Tank Farm ceased operation due to the Loma Prieta earthquake. Both of these pipelines were removed during site demolition activities in September and October 2007. Other potential sources of historic contamination are a sump, a UST, and ASTs.

c. Humble/PS Trading Tank Farm

Until November 2001 when the ASTs and associated appurtenances were removed, the Humble/PS Trading Tank Farm contained two out-of-service welded field constructed steel ASTs. The ASTs were constructed in 1969 and were operational until 1991. The Port leased this site to the Humble Oil & Refinery Company in about 1970. Thereafter, Exxon Corporation ("Exxon") took over the lease, and in 1980 Exxon assigned the lease to Pacific Southwest Airlines, a predecessor of PS Trading, Inc. Tank T-20 had a capacity of 300,000 gallons and Tank T-21 had a capacity of 600,000 gallons. The ASTs were inside a secondary containment area. In mid-1998, an internal and external inspection following API Standard 653 was conducted on these tanks, which identified various deficiencies of the tank system including pitting and corrosion on the tank bottoms. The tanks were removed from the tank farm in 2001 by PS Trading, Inc. There are no known active pipelines on this site.

On March 30, 1981, during the operation of this facility by FMC, an unknown quantity of jet fuel lost after ruptured diaphragm switch allowed fuel to be released. Fuel soaked through containment berm into ditch and wetlands. Unknown quantity of spilled fuel and water was recovered by vacuum truck. In June 2006, PS Trading, Inc. entered into bankruptcy proceedings.

d. SFPP, L.P., Oakland Airport Transfer Station

SFPP, L.P., an operating partner of Kinder Morgan Energy Partners L.P. ("KMEP") has operated the SFPP, L.P., Oakland Airport Transfer Station since the 1970s. It currently contains two active fuel pipelines: one 12-inch dedicated jet fuel line from Richmond to Brisbane, with a 10-inch active tie-in branch to Tank Farm S; and one 10-inch multi-product fuel line from Richmond to Brisbane. The latter 10-inch line has an unused inactive tie-in to the aforementioned 10-inch SFPP to Tank Farm S branch. The site also contains a fuel filter area and a sump tank.

One known release of turbine oil has been reported at the SFPP, L.P., Oakland Airport Transfer Station. Other discharges to soil and groundwater have occurred at unknown dates, and were addressed in investigation reports by KMEP, in 2003 and 2004, following

discovery of groundwater impacts at the boundary between Tank Farm C and SFPP, L.P., Oakland Airport Transfer Station by Chevron in 2002.

Known releases at South Field Tank Farm are summarized in below table

Date	Operator/ Terminal	Description
July 12, 1974	Shell / Tank Farm S	•Between 100,800 and 300,000 gallons of jet A are estimated to have been released in vicinity of Tank 250 based on reports and photographic evidence •Fuel was observed leaking through the containment wall and into recovery ditches dug along the outside of the wall •84,000 gallons estimated to have been recovered from behind wall, 16,800 gallons recovered from outside wall
February 7, 1975	Southern Pacific and Shell/ Tank Farm S	•Volume unknown. Seepage from bank under Southern Pacific Pipeline facility
December 9, 1981	FMC/ Tank Farm S	•1,443 gallons jet fuel spill due to overflow from truck tank into retention pond. •Fuel also observed in larger pond and drainage ditch on northeast corner of pond.
March 30, 1982	FMC/ Humble PS Trading Tank Farm	•Unknown quantity of jet fuel lost after ruptured diaphragm on a pressure sensing switch allowed fuel to be released. Fuel soaked through containment berm and drained into the marsh and the ditch. Unknown quantity of fuel and water was recovered by a vacuum truck.
June 23, 1982	Chevron/ Tank Farm C	•300 gallons at the fuel truck loading rack due to malfunctioned shutoff valve. The fuel drained into the ditch which carries water to the west.
December 7, 1983	FMC/Tank Farm S	•Unknown quantity of jet fuel lost •19,876 gallons total liquid recovery by vacuum truck from retention pond •Amount of JP-5 jet fuel in this recovery volume was not reported
September 4, 1984	FMC/Tank Farm S	•18,774 gallons of jet A estimated to have overflowed from Tank 253 due to delivery to wrong tank •8,000 gallons recovered from retention pond •Coast Guard observed fuel in wetlands
November 30, 1990	Swissport (Dynair)	•Estimated 2,000 to 3,000-gallon jet fuel release in filter bank area due to oil/water separator overflow

Date	Operator/ Terminal	Description
	Fueling, Inc./ Tank Farm S	•Area impacted by release and amount recovered not reported
October 28, 1991	Swissport (Dynair) Fueling, Inc./ Tank Farm S	•Reported 300 gallons jet fuel leaked from top vents of Tank 250 due to overfilling •Area impacted by release and amount recovered not reported
Discovered prior to December 1997	Unknown/ Tank Farm S	•Gasoline, BTEX, and MTBE were identified in soil and groundwater in the vicinity of the "loop" area of the Bay Crossing Line. A specific oxygenated gasoline release event has not been identified.

3. **Named Dischargers:** The following named parties are collectively referred to as the Dischargers:

- Chevron Products Company is named as a Discharger because of substantial evidence that it discharged pollutants to soil and groundwater at Tank Farm C, including its use of petroleum hydrocarbons in operation of Tank Farm C and the presence of the same pollutants in soil and groundwater beneath Tank Farm C.

- Equilon Enterprises, LLC ("Equilon") is named as a Discharger because of substantial evidence that it discharged pollutants to soil and groundwater, including its use and transfer of oxygenated gasoline in operation of the Bay Crossing Line and the presence of the same pollutants in soil and groundwater beneath Tank Farm S.

- Oakland Fuel Facilities Corporation is named as a Discharger because of substantial evidence that it discharged pollutants to soil and groundwater, including its use of jet fuel in operation of jet fuel terminal facilities at Tank Farm S and the presence of the same pollutants in soil and groundwater beneath Tank Farm S.

- PS Trading, Inc. is named as a Discharger because of substantial evidence that it discharged pollutants to soil and groundwater, including its use of jet fuels in operation of the Humble/PS Trading tank farm and the presence of the same pollutants in soil and groundwater beneath the Humble/PS Trading tank farm.

- Shell Oil Company ("Shell") is named as a Discharger because of substantial evidence that it discharged pollutants to soil and groundwater, including its use of jet A fuel in its operation of Tank Farm S and the presence of the same pollutants in soil and groundwater beneath Tank Farm S.

- Swissport Fueling, Inc. is named as a Discharger because of substantial evidence that it (or its predecessor) discharged pollutants to soil and groundwater, including its use of jet

A fuel in its operation of Tank Farm S and the presence of the same pollutants in soil and groundwater beneath Tank Farm S.

- SFPP, L.P., an operating partner of Kinder Morgan Energy Partners, L.P. is named a Discharger because of substantial evidence that it discharged pollutants to soil and groundwater, including its use of jet fuel and gasoline in its operation of two active fuel pipelines across the SFPP, L.P., Oakland Airport Transfer Station and the presence of the same pollutants in soil and groundwater beneath the Transfer Station.

- The Port of Oakland is named as a Discharger because it owned the SFTF property during and after the time of the activities that resulted in the discharges, has knowledge of the discharges and the activities that caused the discharges, and has the legal ability to prevent the discharges.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Water Board will consider adding those parties' names to this order.

4. **Regulatory Status:** This site was subject to Water Board Order No. R2-2002-0013 (Site Cleanup Requirements) adopted on January 23, 2002.

5. **Site Hydrogeology:** The SFTF is located in an area that was part of the Bay until between 1957 and 1961 when a perimeter dike was constructed and filled. This perimeter dike surrounds the entire airport and prevents the Bay from inundating the area during high tide. The initial hydraulic fill was placed using sand and silt pumped in from an offshore location approximately one-half mile north of the Oakland airport. The fill material for major structure foundations, roadways, and the airport runways was brought in and placed as dry aggregate base (i.e., engineered and compacted). The thickness of the fill material underlying the three tank farms varies from approximately five to slightly greater than ten feet. Native clay with inter-bedded sand zones is present beneath the engineered fill and hydro-fill. The Yerba Buena Mud beneath the native clay forms a major aquitard between the shallow and deep aquifers in the study area.

   Shallow groundwater is present within the engineered fill material and occurs as a perched water zone within the relatively permeable fill material above the lower permeability native clay. Groundwater typically occurs within the fill at depths ranging from two to seven feet below ground surface. Groundwater flow direction in this shallow perched zone is difficult to predict due to the engineered fill and underground pipelines in the area and variations due to seasonal rainfall events. The groundwater appears to flow from the elevated engineered fill towards the retention basins around the SFTF (i.e., not toward the Bay), which represent the ground surface elevation following initial fill placement. During the summer and fall months, the retention basins are dry. During the winter months, rainfall inundates the surface water retention basins within the dike area adjacent to the SFTF. A drainage channel that runs along the inside of the main perimeter dike directs surface water within the dike area to Pump House #4 which is located approximately 200 yards to the west of the

SFTF from which, the surface water is periodically pumped over the dike and into the Bay. The groundwater elevation within the core of the dike is several feet higher than that observed at the tank farms.

6. **Remedial Investigations:** The Port submitted a soil and groundwater investigation report for the SFTF dated November 16, 1998, which summarized previous investigations. This report indicated that jet fuel releases had occurred at Tank Farm S, Tank Farm C, and the Humble/PS Trading Tank Farm. The Port submitted a data report dated July 23, 2001, summarizing all historical soil and groundwater analytical data associated with jet fuel releases at Tank Farm S. Subsequent remedial investigations in the SFTF area have been conducted by the Port and current or former Port lessees, as described below.

a. Tank Farm S

Soil. More than one hundred soil samples have been collected from over a hundred soil borings and groundwater monitoring wells in the vicinity of Tank Farm S during site investigations since 1996. The soil samples were analyzed for jet A fuel and a smaller subset of samples were analyzed for gasoline, benzene, toluene, ethylbenzene, and xylenes ("BTEX"), methyl tert-butyl ether ("MTBE"), and polyaromatic hydrocarbons ("PAHs"). Elevated concentrations of jet A fuel have been present in soils beneath the secondary containment area for the aboveground tanks with the highest concentration downgradient of the secondary containment area (9,840 mg/kg, boring (E) GP-24). Oxygenated gasoline constituents were not detected in soils within the secondary containment area. Since the initiation of subsurface characterization activities, the highest concentrations of gasoline, BTEX, and MTBE have been identified and appears to be limited to the center of the site (maxima of 20,000 mg/kg TPH-g and 120 mg/kg MTBE in GP-2; and 23 mg/kg benzene, 580 mg/kg toluene, 120 mg/kg ethylbenzene, and 650 mg/kg xylenes in GP-6). The detected concentrations in soil are above the Environmental Screening Levels ("ESLs") for commercial land uses for shallow soils not underlain by a potential drinking water source. The past investigations on the site and IRAP implementation report have defined the extent of soil contamination on the site. Future potential decommissioning of on-site facilities may identify further soil contamination.

Groundwater. On and adjacent to the Tank Farm S, 31 groundwater monitoring wells have been installed since 1998. Three interim extraction sumps were installed in the backfill of the three excavations completed as part of the Interim Remedial Action Plan ("IRAP") in January 2004. Twenty-eight monitoring wells have been monitored quarterly for water levels and/or water quality since 2001 and the extraction sumps have been monitored since installation in 2004. Water level measurements and analyses for jet A fuel and/or gasoline, BTEX, and MTBE have been conducted as part of the quarterly monitoring program. A limited number of groundwater samples have been analyzed for polynuclear aromatic hydrocarbons (PAHs), total dissolved solids (TDS) and geochemical parameters including nitrates, sulfates, dissolved iron, dissolved manganese, dissolved carbon dioxide, dissolved methane, and total alkalinity.

Dissolved phase petroleum hydrocarbons are currently present in areas beneath and down-gradient of Tank Farm S, and free-phase hydrocarbons and/or sheen has periodically been

observed in a limited number of wells. The maximum concentrations of dissolved petroleum hydrocarbons detected in wells in Tank Farm S since 1998 are as follows: TPH as Jet A fuel (1,100,000 µg/L), TPH as Gasoline (50,000 µg/L), MTBE (110,000 µg/L), Benzene (2,300 µg/L), Toluene (9,500 µg/L), Ethylbenzene (2,000 µg/L), and xylenes (7,200 µg/L).

The highest concentrations of dissolved jet A fuel were detected in wells west and southwest of the aboveground storage tanks. The jet A fuel plume extends from the aboveground tanks to the retention basin and wetland area southwest of Neil Armstrong Way. The highest concentrations of dissolved gasoline, BTEX, and MTBE are in the vicinity of the Loop Area at Tank Farm S. The oxygenated gasoline plume overlaps the jet A fuel plume. The oxygenated gasoline plume also extends towards an adjacent retention basin and wetland area located west of Tank Farm S. In September 2001, the maximum free product thickness at the site was 0.44 feet at MW-1. Monitoring results from on-site monitoring wells show that separate phase petroleum hydrocarbons was present in the second quarterly monitoring event in 2007 in MW-1 (0.04 foot) and petroleum sheens were identified in MW-17 and MW-18. Dissolved concentrations (as of April 2007) of jet fuel (up to8,900 µg/L), gasoline (up to 3,800µg/L), benzene (up to 160 µg/L) and MTBE (up to 3,100 µg/L) on the site exceed groundwater ESLs that assume discharge of groundwater into marine or estuary surface waters in some of the wells (i.e., MW-1, MW-7, MW-18, WP-3 and EX-1). The horizontal and vertical extent of groundwater contamination has been defined at and around the site during past groundwater investigations and IRAP implementation. Future potential decommissioning of facilities may identify further groundwater contamination.

Stormwater. Between the late 1960s and March 1998, an unlined retention pond adjacent to the southwest side of Tank Farm S served as additional secondary containment for stormwater. This pond is separated from a surface water retention basin by an earthen dike, which historically contained three open culverts that allowed the contents of the pond to flow into the surface water retention basin. Stormwater or spilled product contained within the concrete containment walls of Tank Farm S was allowed to collect in four small underground sumps connected to the retention pond by a central underground pipeline. The pipeline between the sumps and retention pond was disconnected by the Port in 1998.

In February 1998, Water Board staff collected surface water samples from the retention pond noting a strong petroleum odor and a sheen on the surface of the retention pond as well as distinct globules of an oily substance in the sample. The Water Board's contract lab reported 5,900 mg/L diesel and 72 mg/L gasoline. Shallow soil samples taken in the retention pond bottom in July 1998 contained up to 6,200 mg/kg jet A fuel (boring B-23). The extent of jet A fuel in the vicinity of B-23 appears limited as evidenced by the concentrations of jet A fuel to the east (140 mg/kg at Boring B-39) and west (7.3 mg/kg at (S) GP-21).

Surface Water. Surface water has been collected from surface water monitoring locations since 2001. Two locations are in the stormwater retention pond southeast of the site and one location is in a stormwater retention basin west of the site. Up to 1,400 µg/L of petroleum hydrocarbons have been detected in the surface water (in 2003 in the southeastern retention

pond). From April 2006 through April 2007, no petroleum or related compounds have been identified above the laboratory reporting limits in any of the surface water monitoring locations.

b. Tank Farm C

Soil. During remedial investigations conducted by Chevron since 1996, about 125 soil samples were collected from bore holes and groundwater monitoring well locations. The samples were analyzed for jet A fuel, BTEX, MTBE, total petroleum hydrocarbons and selective sample were also analyzed for PAHs and polychlorinated biphenyls ("PCBs"). The majority of the samples were collected from fill from depths less than ten feet below ground surface; about ten samples were collected from underlying Bay Mud. About 21 samples contained jet A fuel above 500 mg/kg and up to 6,500 mg/kg. Deeper soil samples did not contain jet A fuel above laboratory reporting limits, except for one sample (8 mg/kg). BTEX and MTBE concentrations did not exceed ESLs for commercial land uses for shallow soil where groundwater is not a potential source of drinking water; neither did the limited samples analyzed for PAHs and PCBs. Chevron and KMEP performed a joint soil gas survey in June 2007. The final soil gas survey reports were submitted on October 12, 2007. The extent of soil contamination has largely been defined at and around the site. Interim remedial activities and decommissioning of ASTs, the UST, sump, and pipelines, planned for the end of 2007, and the results of the joint soil gas survey may further identify contamination from these potential source areas.

Groundwater. The remedial investigation included the installation of nine groundwater monitoring wells installed in the fill, above the Bay Mud. Three deeper groundwater monitoring wells were installed in 1998. The nine shallow and three deeper monitoring wells were sampled and analyzed for total petroleum hydrocarbons, jet A fuel, BTEX, and MTBE in 2002. In the deeper wells, only jet A fuel was identified above laboratory reporting limits at a concentration up to 120 µg/L. In the shallow wells, up to 3,900 µg/L of jet A fuel was identified in monitoring well C-2. Quarterly groundwater monitoring has continued since the remedial investigation. During the second quarterly monitoring event in 2007, the maximum jet A fuel concentration was 15,000 µg/L (monitoring well C-2). The groundwater concentrations of jet A fuel is above the ESLs for groundwater. Groundwater contamination has been defined on and around the site during past investigations but IRAP implementation and equipment decommissioning may identify additional groundwater contamination.

c. Humble/PS Trading Tank Farm

Soil. A remedial investigation was conducted in 2002 by PS Trading, Inc. As part of that investigation, about 62 soil samples were collected from depths up to 12 feet below ground surface; most of the samples were collected from fill, which ranges in thickness up to ten feet. The samples were analyzed for jet A fuel, BTEX, and selectively for PCBs. Eleven samples had jet A fuel concentration above 500 mg/kg (up to 16,000 mg/kg). About six samples had xylenes concentrations above the ESL for commercial land uses for shallow soil where groundwater in not a potential drinking water source. At about five locations,

PCB concentrations exceeded the commercial ESLs. Soil contamination has been defined through past soil investigations and IRAP implementation activities.

Groundwater. During the remedial investigation ten groundwater monitoring wells were installed at the site. The wells were sampled and the samples analyzed for jet A fuel and BTEX. Two wells contained jet A fuel concentrations above 500 µg/L (up to 2,700 µg/L). Subsequent to the remedial investigation, quarterly groundwater monitoring activities has been undertaken by PS Trading, Inc., until the second quarter of 2006 when PS Trading, Inc., entered into bankruptcy proceedings. The Port resumed quarterly groundwater monitoring in the third quarter of 2007. In the second quarter of 2006, jet A fuel was identified in two monitoring wells (HPMW-6 and 7) at a concentration of up to 190 µg/L. PCBs had previously been detected in monitoring well HPMW-6 (up to 3.5 µg/L of Aroclor1254 in 2005), but were not identified in 2006 after sampling techniques were changed to remove turbidity. Groundwater contaminants at the site do not exceed ESLs for groundwater which assumes discharges to estuarine or marine surface waters. Groundwater contamination has been defined through past investigations.

Surface Water. There are four surface water monitoring locations around the Humble/PS Trading Tank Farm. Three of the locations have been dry since initiation of sampling. The fourth surface water sampling location (SMP-1) was sampled in 2002 and 2005 for jet A fuel and once for BTEX. No compounds have been identified above laboratory reporting limits from the surface water sampling location.

d. SFPP, L.P., Oakland Airport Transfer Station

Soil. In 2003 and 2004, KMEP conducted site investigations on the site. Soil samples were collected from 17 borings and five monitoring wells from various depths, up to 33.5 feet below ground surface. The highest concentration of jet A fuel was identified at a depth of nine feet below ground surface at 3,100 mg/kg near the northwestern corner of the site (MW-3). BTEX were not identified in any of the soil samples above laboratory reporting limits. MTBE was identified in a limited number of samples (up to 20 mg/kg) near the center of the site. In 2006, soil samples were collected from two additional groundwater monitoring wells (MW-6 and MW-7) installed by KMEP on the SFPP, L.P., Oakland Airport Transfer Station and on the adjacent Tank Farm C. Soil samples collected from these well borings had a maximum jet A fuel concentration of 270 mg/kg (MW-7) at a depth of five feet below ground surface. The jet A fuel and gasoline concentrations in soil exceed the ESLs for commercial land uses for shallow soil not underlain by a potential drinking water source. Chevron and KMEP performed a joint soil gas survey in June 2007. The final soil gas survey reports were submitted on October 12, 2007. The extent of soil contamination has largely been defined at the site. The results of the joint soil gas survey have identified soil contamination at this and the adjacent Tank Farm C site.

Groundwater. Jet A fuel, gasoline, MTBE, and BTEX were identified in groundwater samples from hydropunches and monitoring wells installed in 2003, 2004, and 2006. Site characterization activities in 2003 and 2004 by KMEP identified contamination of grab groundwater samples with jet fuel (up to 3,600,000 µg/L); gasoline (up to 13,000 µg/L); MTBE (up to 280 µg/L); and benzene, toluene, ethylbenzene, and xylenes ("BTEX") (up to

93 µg/L of benzene). The highest reported concentrations from the groundwater monitoring wells on the site in 2006 were 24,000 µg/L jet A fuel (MW-7), 430 µg/L gasoline (MW-3), and 190 µg/L MTBE (MW-3); there were no BTEX identified above the laboratory reporting limits. The jet A fuel concentrations are above ESLs for groundwater which assumes discharges to estuarine or marine surface waters. Groundwater contamination has largely been defined on the site. IRAP implementation may further identify soil and groundwater contamination at the site.

7. Interim Remedial Measures:

a. Tank Farm S

Soil. In 2003, an IRAP was implemented at Tank Farm S by OFFC and Shell, as documented in an IRAP Implementation Plan by OFFC and Shell. As part of the interim remedial action, Shell removed about 144 cubic yards of contaminated soil from three small areas (EX-1, EX-2 and EX-3) in the northwestern portion of the site where the highest concentrations of soil contamination had been previously identified. The excavation was backfilled with clean imported soil and, in each excavation area, an extraction sump was installed in the backfill. The ranges of residual soil contamination detected within the excavations were reported as follows: 120 to 2,500 mg/kg of jet fuel, 0.7 to 560 mg/kg of gasoline, 0.38 to 1.6 mg/kg of benzene, 1 to11 mg/kg of ethylbenzene, 1.1 to 49 mg/kg of total xylenes, and 0.4 to 21 mg/kg of MTBE. In addition, visual observations indicated soil staining in excavation walls and separate phase petroleum product on groundwater in the excavations. The residual concentrations of jet fuel, gasoline, MTBE, benzene, and xylenes exceed the ESLs for commercial land uses for shallow soils not underlain by a potential drinking water source. Final remedial measures need to be implemented to cleanup soil at Tank Farm S to reduce any threat to water quality, public health, and the environment posed by the discharge of waste.

Groundwater. As part of the IRAP implementation, contaminated groundwater was removed by Shell and OFFC from the three backfill extraction sumps intermittently, and free product and contaminated groundwater from other on-site wells using vacuum truck and/or absorbent socks. Approximately 221,800 gallons of groundwater was extracted from the interim extraction sumps. The groundwater extraction was discontinued in November 2006. In the first quarterly monitoring event in 2007, the concentration of contaminants in the three interim extraction sumps ranged from non-detect (ND) to 60 µg/L of gasoline, ND to 1.2 µg/L of benzene, and ND to 260 µg/L of MTBE. Monitoring results from other on-site monitoring wells show that separate phase TPH was present in the second quarterly monitoring event in 2007 in MW-1 (0.04 foot) and petroleum sheens were identified in MW-17 and MW-18. Dissolved concentrations in the wells (as of second quarter of 2007) of jet fuel (ND to 2,100 µg/L), gasoline (ND to 3,800µg/L), and benzene (ND to 160 µg/L) on the site exceed groundwater ESLs that assume discharge of groundwater into marine or estuary surface waters. No final remediation has occurred at Tank Farm S. Final remedial measures need to be implemented to cleanup groundwater at Tank Farm S to reduce any threat to water quality, public health, and the environment posed by the discharge of waste.

Stormwater. The Port plugged three culvert outlets to the retention pond in March 1998. Since December 1999, the facility has been operating an on-site carbon adsorption-based treatment system to treat storm water from the Tank Farm S secondary containment area and process water (tank draw-off water, wash water, etc.) generated during routine fuel terminal operations. After on-site treatment, the effluent is discharged to East Bay Municipal Utility District's ("EBMUD's") sanitary sewer system.

b. Tank Farm C

Chevron submitted an IRAP to the Water Board on February 8, 2005, for the removal of about 1,000 cubic yards of affected soils in excess of 500 mg/kg of TPH-jet A, and removal of a UST and waste sump. The Executive Officer approved the IRAP on March 29, 2005. On September 24, 2007, Chevron submitted an addendum to the IRAP for performing additional activities prior to removal of the UST and sump at this tank farm. OFFC removed existing ASTs, associated piping, the filter bank, and pump pad in September and October 2007 in support of reconfiguration of the SFTF. Because of the completion of the AST closure activities by OFFC in October 2007, Chevron implemented the approved IRAP and its addendum in November 2007. Interim and final remedial measures need to be implemented at this site to reduce the threat to water quality, public health, and the environment posed by the discharge of waste.

c. Humble/PS Trading Tank Farm

PS Trading began demolition of the tank farm in November 2001. PS Trading implemented interim remediation at the Humble/PS Trading Tank Farm in 2004 in accordance with an IRAP prepared by PS Trading, dated September 2003. The interim remediation resulted in the removal of about 3,685 tons of soil. The purpose of soil removal was to remove soil contaminated with jet A fuel above 500 mg/kg and poly-chlorinated biphenyls ("PCBs") above 0.74 mg/kg. Residual contaminant concentrations in the soil in the upper seven feet of the excavations met these cleanup goals. Below a depth of seven feet, confirmation sampling indicated residual PCB concentration up to 3.4 mg/kg and jet A fuel up to 4,600 mg/kg. Final remedial measures need to be implemented at this site to reduce the threat to water quality, public health, and the environment posed by the discharge of waste.

d. SFPP, L.P., Oakland Airport Transfer Station

KMEP removed approximately two cubic yards of turbine oil-impacted soil and transported offsite for disposal in May 2003, and submitted a revised IRAP in July 2005. The approval of the revised IRAP has been delayed and is contingent on the results of a supplemental investigation and a joint Chevron-KMEP soil gas survey. The supplemental investigation was conducted in September 2006 and the joint Chevron-KMEP soil gas survey was conducted in June 2007. KMEP will submit a revised IRAP to the Water Board based on the results of the supplemental investigation and joint Chevron-KMEP soil gas survey. Interim and final remedial measures are necessary to cleanup soil and groundwater at SFPP, L.P., Oakland Airport Transfer Station to reduce the threat to water quality, public health, and the environment posed by the discharge of waste.

8. **Basin Plan:** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. EPA, and the Office of Administrative Law where required.

   The existing and potential beneficial uses of groundwater underlying and adjacent to the SFTF include:

   - Municipal and domestic water supply
   - Industrial process water supply
   - Industrial service water supply
   - Agricultural water supply
   - Freshwater replenishment to surface waters

   The SFTF is located within the East Bay Plain Groundwater Basin. Shallow groundwater beneath the facility is brackish to saline and there is no historical, current, or planned use of the shallow groundwater in the vicinity of the SFTF as a source of drinking water. Shallow groundwater in the vicinity of the SFTF is brackish to saline and generally exceeds 3,000 mg/L total dissolved solids ("TDS"). Therefore, shallow groundwater meets the exemption criteria of the State Water Board's Sources of Drinking Water Policy (SWRCB Resolution 88-63). The deeper aquifers beneath the site contain fresh water that has historically been used as a source of drinking water.

   The existing and potential beneficial uses of San Francisco Bay include:

   - Water contact and non-contact recreation
   - Wildlife habitat
   - Cold freshwater and warm freshwater habitat
   - Fish migration and spawning
   - Navigation
   - Estuarine habitat
   - Shellfish harvesting
   - Preservation of rare and endangered species

9. **Other Water Board Polices:** Water Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

   Water Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels.

10. **State Water Board Policies:** State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. Given the Board's past experience with groundwater pollution cases of this type, it is unlikely that background levels of water quality can be restored. This initial conclusion will be verified when a remedial action plan is prepared. This order and its requirements are consistent with Resolution No. 68-16.

    State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

11. **Preliminary Cleanup Goals:** The Dischargers will need to make assumptions about future cleanup standards for soil and groundwater, in order to determine the necessary extent of interim remedial actions, and the draft remedial action plan. Pending the establishment of site-specific cleanup standards, the following preliminary cleanup goals should be used for these purposes:

    a. Groundwater: Applicable water quality objectives (e.g., lower of primary [toxicity] and secondary [taste and odor] maximum contaminant levels, or MCLs) or, the Water Board's commercial land use Environmental Screening Levels (ESLs) or in the absence of a chemical-specific objective, equivalent drinking water levels based on toxicity and taste and odor concerns.

    b. Soil: Applicable commercial land use ESLs or its equivalent. Soil screening levels are intended to address a full range of exposure pathways, including direct exposure, indoor air impacts, nuisance, and leaching to groundwater. For purposes of this subsection, the Dischargers should assume that groundwater is a not a potential source of drinking water due to high TDS levels.

12. **Basis for 13304 Order:** California Water Code Section 13304 authorizes the Water Board to issue orders requiring a discharger to cleanup and abate waste where the discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

13. **Cost Recovery:** Pursuant to California Water Code Section 13304, the Dischargers (as appropriate) are hereby notified that the Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

14. **CEQA:** This action is an order to enforce the laws and regulations administered by the Water Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

15. **Notification:** The Water Board has notified the Dischargers and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the Dischargers (or their agents, successors, or assigns) shall clean up and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. TASKS

<u>TANK FARM S</u>

Applicability: Equilon, Shell, OFFC, Swissport, and the Port

1. DRAFT REMEDIAL ACTION PLAN INCLUDING DRAFT CLEANUP STANDARDS

COMPLIANCE DATE: February 28, 2009

Submit a technical report acceptable to the Executive Officer containing:

a. Results of the remedial investigation
b. Evaluation of the installed interim remedial actions.
c. Feasibility study evaluating alternative final remedial actions.
d. Risk assessment for current and post cleanup exposures
e. Recommended final remedial actions and cleanup standards
f. Implementation tasks and time schedule

Item c should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

Item e should consider the preliminary cleanup goals for soil and groundwater identified in finding 11 and should address the attainability of background levels of water quality (see finding 10).

TANK FARM C

Applicability: Chevron and the Port

2. COMPLETION OF INTERIM REMEDIAL ACTIONS

COMPLIANCE DATE: March 31, 2008

Submit a technical report, acceptable to the Executive Officer, documenting completion of the Interim Remedial Action Plan. This report shall also include 1) a Supplemental Remedial Investigation Workplan as necessary to define the vertical and lateral extent of soil and groundwater contamination discovered during AST and UST closure activities, and 2) a report on completion of the interim remedial measures for cleanup of soil and groundwater contamination discovered during AST and UST closure activities.

3. DRAFT REMEDIAL ACTION PLAN INCLUDING DRAFT CLEANUP STANDARDS

COMPLIANCE DATE: February 28, 2009

Submit a technical report acceptable to the Executive Officer containing:

a. Results of necessary tasks identified in the Task 2 Supplemental Remedial Investigation Workplan
b. Results of remedial investigations
c. Evaluation of the installed interim remedial actions
d. Feasibility study evaluating alternative final remedial actions
e. Risk assessment for current and post cleanup exposures
f. Recommended final remedial actions and cleanup standards
g. Implementation tasks and time schedule

Item d should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items b through d should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility

studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

Items f through g shall also address any contamination discovered during AST and UST closure activities.

Item f should consider the preliminary cleanup goals for soil and groundwater identified in finding 11 and should address the attainability of background levels of water quality (see finding 10).

HUMBLE/PS TRADING TANK FARM

Applicability: PS Trading and the Port

4. DRAFT REMEDIAL ACTION PLAN INCLUDING DRAFT CLEANUP STANDARDS

COMPLIANCE DATE: February 28, 2009

Submit a technical report acceptable to the Executive Officer containing:

a. Results of remedial investigation
b. Evaluation of the installed interim remedial actions.
c. Feasibility study evaluating alternative final remedial actions.
d. Risk assessment for current and post cleanup exposures
e. Recommended final remedial actions and cleanup standards
f. Implementation tasks and time schedule

Item c should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

Item e should consider the preliminary cleanup goals for soil and groundwater identified in finding 11 and should address the attainability of background levels of water quality (see finding 10).

SFPP, L.P., OAKLAND AIRPORT TRANSFER STATION

Applicability: KMEP and the Port

5. REVISED INTERIM REMEDIAL ACTION WORKPLAN

COMPLIANCE DATE: May 31, 2008

Submit a revised workplan acceptable to the Executive Officer to evaluate interim remedial action alternatives and to recommend one or more alternatives for implementation. The workplan should incorporate the findings of the supplemental investigation, the joint Chevron-KMEP soil gas survey, the findings of AST and UST closure activities at the adjacent Tank Farm C, specify actions to prevent the off-site migration of contaminated groundwater and specify a proposed time schedule. Work may be phased to allow the interim remedial actions to proceed efficiently. If groundwater extraction is selected as an interim remedial action, then one task will be the completion of an NPDES permit application for discharge of extracted, treated groundwater to waters of the State. The application must demonstrate that neither reclamation nor discharge to the sanitary sewer is technically or economically feasible.

6. COMPLETION OF INTERIM REMEDIAL ACTIONS

COMPLIANCE DATE: November 30, 2008

Submit a technical report, acceptable to the Executive Officer, documenting completion of necessary tasks identified in the Task 5 Workplan.

7. DRAFT REMEDIAL ACTION PLAN INCLUDING DRAFT CLEANUP STANDARDS

COMPLIANCE DATE: February 28, 2009

Submit a technical report acceptable to the Executive Officer containing:

a. Results of remedial investigation
b. Evaluation of the installed interim remedial actions.
c. Feasibility study evaluating alternative final remedial actions.
d. Risk assessment for current and post cleanup exposures
e. Recommended final remedial actions and cleanup standards
f. Implementation tasks and time schedule

Item c should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Water Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

Item e should consider the preliminary cleanup goals for soil and groundwater identified in finding 11 and should address the attainability of background levels of water quality (see finding 10).

8. **Delayed Compliance:** If the Dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Dischargers shall promptly notify the Executive Officer, who may consider revision to this Order.

C. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good Operation and Maintenance (O&M)**: The Dischargers (as applicable) shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The Dischargers (as applicable) shall be liable, pursuant to California Water Code Section 13304 and Health and Safety Code Section 25270.9, to the Water Board for all reasonable costs actually incurred by the Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the Dischargers (as applicable) over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the Dischargers (as applicable) shall permit the Water Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
   b. Entry upon tank facility premises to conduct periodic inspections.
   c. Access to copy any records required to be kept under the requirements of this Order.
   d. Inspection of any monitoring or remediation facilities installed in response to this Order.
   e. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers (as applicable).

5. **Self-Monitoring Program**: The Dischargers (as applicable) shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor/Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered professional geologist, a California certified engineering geologist, or a California registered professional engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Water Board using approved U.S. EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Water Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g., temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the Port of Oakland.

9. **Reporting of Changed Owner or Operator:** The Dischargers (as applicable) shall provide written notice on any changes in site occupancy or ownership associated with the property described in this Order. This report shall be filed with the Water Board within 30 days following a change in site occupancy or ownership.

10. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited, or probably will be discharged in or on any waters of the state, the Discharger shall report such discharge to the Water Board by calling (510) 622-2369 during regular office hours (Monday through Friday, 8:00 to 5:00). A written report shall be filed with the Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified. This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order:** This Order supersedes and rescinds Water Board Order No. R2-2002-0013.

12. **Periodic SCR Review:** The Water Board will review this Order periodically and may revise it when necessary. The Dischargers (as applicable) may request revisions and upon review the Executive Officer may recommend that the Water Board revise these requirements.

Digitally signed by Bruce Wolfe
Date: 2007.11.26 15:39:44
-08'00'

November 26, 2007

Bruce H. Wolfe
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY
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Attachments: Figure 1: Site Location Map
Figure 2: Site Plan
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

CHEVRON PRODUCTS COMPANY
EQUILON ENTERPRISES LLC
OAKLAND FUEL FACILITIES CORPORATION
PS TRADING, INC.
SHELL OIL COMPANY
SWISSPORT FUELING, INC.
SFPP, L.P., an operating partner of KINDER MORGAN ENERGY PARTNERS, L.P.
PORT OF OAKLAND

for the property located at

1 EDWARD WHITE WAY
OAKLAND
ALAMEDA COUNTY

also known as

SOUTH FIELD TANK FARM
OAKLAND INTERNATIONAL AIRPORT

1. **Authority and Purpose**: The Water Board requires the technical reports in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Water Board Order No. R2-2007-0082 (site cleanup requirements).

2. **Monitoring**: The Dischargers (as applicable) shall measure groundwater elevations in all monitoring wells, and shall collect and analyze representative samples of groundwater from wells and, if appropriate, surface water bodies such as retention pond or adjacent wetlands according to the attached monitoring schedules.

   The Dischargers (as applicable) shall sample any new monitoring or extraction wells and analyze groundwater samples for the same constituents as shown in the monitoring schedules. The Dischargers (as applicable) may propose changes in the monitoring schedules; any proposed changes are subject to Executive Officer approval.

3. **Monitoring Reports**: The Dischargers (as applicable) shall submit annual monitoring reports to the Water Board no later than 45 days following the annual monitoring event (e.g., by February 15). The reports shall include:

a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the Dischargers (as applicable)'s principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map shall be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the annual report each year.

c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map shall be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the annual report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume annually. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g., soil vapor extraction), expressed in units of chemical mass per day and mass annually. Historical mass removal results shall be included in the annual report each year.

e. Status Report: The monitoring reports shall describe relevant work completed during the reporting period (e.g., site investigation, interim remedial measures) and work planned for the following quarter.

4. **Violation Reports**: If the Dischargers (as applicable) violate requirements in the Site Cleanup Requirements, then the Dischargers (as applicable) shall notify the Water Board office by telephone as soon as practicable once the Dischargers (as applicable) have knowledge of the violation. Water Board staff may, depending on violation severity, require the Dischargers (as applicable) to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The Dischargers (as applicable) shall notify the Water Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The Dischargers (as applicable) or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Water Board upon request.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Dischargers (as applicable). Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

Attachment: Monitoring Schedules

Monitoring Schedules

TANK FARM S

Well #	Sampling Frequency	Analyses
MW-1	Semi-Annually Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE PAHs
MW-2	Annually	TPH as Jet Fuel TPH as gasoline, BTEX, MTBE
MW-3	Semi-Annually Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE Geochemical Suite+
MW-5	Semi-Annually Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-15	Semi-Annually Annually	TPH as Jet Fuel PAHs TPH as gasoline BTEX, MTBE
MW-16	Semi-Annually Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-17	Semi-Annually	TPH as Jet Fuel
E-1	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
E-2	Semi-Annually Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE Geochemical Suite
E-3	Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
E-6	Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE Geochemical Suite+
E-7	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
OGP-1	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
OGP-2	Semi-Annually Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
EX-1	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE Geochemical Suite+

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
	Annually	TPH as gasoline BTEX, MTBE	EX-2	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-18	Annually	TPH as gasoline BTEX, MTBE	EX-3	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
	Semi-Annually	TPH as Jet Fuel	SW-2 (surface water)	Semi-Annually	TPH as Jet Fuel
WP-2R	Semi-Annually	TPH as Jet Fuel Geochemical Suite+ TPH as gasoline BTEX, MTBE	SW-3 (surface water)	Semi-Annually	TPH as Jet Fuel
WP-3	Semi-Annually	TPH as Jet Fuel, TPH as gasoline BTEX, MTBE Geochemical Suite+	WP-1A	Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
SW-1 (surface water)	Semi-Annually	TPH as Jet Fuel, TPH as gasoline BTEX, MTBE	MW-19	Annually Semi-Annually	TPH as gasoline, BTEX, MTBE TPH as Jet Fuel

Tank S Monitoring Schedule Notes:

+Geochemical suite includes Nitrates, Sulfates, Dissolved Iron (or Iron [II]), Dissolved Manganese (or Manganese [II]), Dissolved Carbon Dioxide, Dissolved Methane, and Total Alkalinity

1. Measure groundwater elevation semi-annually in all wells and surface water monitoring locations.
2. Measure thickness of free product in wells that contain free product or sheen. These wells will not be sampled; analytical data from such wells do not represent dissolved concentrations.
3. Measure Dissolved Oxygen, Oxidation-Reduction Potential, pH, Temperature, and Conductivity at wells when collecting a laboratory sample.

TANK FARM C:

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
C-1	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE	C-6	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE
C-2	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE	C-7	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE
C-3	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE	C-8	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE
MW-6	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE	C-9	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE
C-5	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE	C-10	Semi-Annually	TPH as Jet Fuel TPH as gasoline Total TPH, BTEX, MTBE

1. Measure groundwater elevation semi-annually in all wells and surface water monitoring locations.
2. Measure thickness of free product in wells that contain free product or sheen. These wells will not be sampled; analytical data from such wells do not represent dissolved concentrations.
3. Measure pH, Temperature, Conductivity and Turbidity at wells when collecting a laboratory sample.

HUMBLE/PS TRADING TANK FARM:

Well #	Sampling Frequency	Analyses
HPMW-6	Semi-Annually	TPH as Jet Fuel
HPMW-7	Semi-Annually	TPH as Jet Fuel

SFPP, L.P., OAKLAND AIRPORT TRANSFER STATION

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
MW-1	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	MW-5	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-2	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	MW-7	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-3	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE			
MW-4	Semi-Annually	TPH as Jet Fuel TPH as gasoline BTEX, MTBE			

1. Measure groundwater elevation semi-annually in all wells and surface water monitoring locations.
2. Measure thickness of free product in wells that contain free product or sheen. These wells will not be sampled; analytical data from such wells do not represent dissolved concentrations.
3. Measure pH, Temperature, Conductivity and Turbidity at wells when collecting a laboratory sample.