

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 18	PAGE 1
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PERMIT TO CONSTRUCT/PERMIT TO OPERATE

COMPANY NAME BP WEST COAST PRODUCTS LLC
BP CARSON REFINERY

COMPANY ADDRESS P.O. BOX 6210
CARSON, CA 90749

EQUIPMENT LOCATION 2350 E. 223rd STREET.
CARSON, CA 90810

FACILITY ID 131003

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
Process 15: OIL WATER SEPARATION					
System 4: WASTE WATER TREATMENT SYSTEM NO. 7					S13.6
OIL WATER SEPARATOR, INLET FLUME, COVERED, WIDTH: 8 FT; DEPTH: 6 FT 6 IN; LENGTH: 63 FT A/N 395598 471290	D994				H23.14
OIL WATER SEPARATOR, FIXED COVER, FOREBAY, WITH OIL SKIMMER, WIDTH: 10 FT; DEPTH: 6 FT 6 IN; LENGTH: 10 FT A/N 395598 471290	D995	C1002		VOC: 500 PPMV (5) [RULE 1176; 9-13-1996]	H23.14
OIL WATER SEPARATOR, FIXED ROOF, LIFT STATION NO. 7, TWO COMPARTMENTS, WITH 108" H OVERFLOW WEIR, WIDTH: 40 FT; DEPTH 12 FT 9 IN; LENGTH: 79 FT A/N 395598 471290	D997	C1632		VOC: 500 PPMV (5) [RULE 1176; 9-13-1996]	C266.1, E127.1, E166.1, H23.14, H23.21
OIL WATER SEPARATOR, OULET FLUME, COVERED, WIDTH: 6 FT; DEPTH: 12 FT 9 IN; LENGTH: 40 FT A/N 395598 471290	D998				H23.14
SUMP, WEST RETENTION BASIN, WIDTH: 250 FT; DEPTH: 23 FT 6 IN; LENGTH: 300 FT A/N 395598 471290	D999				B89.1, D90.9
CARBON ADSORBER, TWO (2) IN SERIES, 360 LBS, 1000 LBS CARBON EACH	C1002	D995			D90.1, D90.2,

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A/N 395598 471290					E128.1, E153.1, K67.16
CARBON ADSORBER, TWO (2) IN SERIES, 1000 LBS CARBON EACH	C1632	D997			D90.1, E128.1, E153.1, K67.16
A/N 395598 471290					
VESSEL, V101, TANKS 19 & 20 CONTAINMENT SURGE, HEIGHT: 40 FT; DIAMETER: 10 FT	D1634				
A/N 395598 471290					
System 5: WASTE WATER TREATMENT SYSTEM NO. 8					S13.6
OIL WATER SEPARATOR, FIXED COVER, DISTRIBUTION SECTION, WIDTH: 5 FT; DEPTH: 10 FT 10 IN; LENGTH: 3 FT	D1004	C1635		VOC: 500 PPMV (5) [RULE 1176; 9-13-1996]	H23.21
A/N 395513 471291					
OIL WATER SEPARATOR, FIXED COVER, SEPARATION SECTION, WIDTH: 5 FT; DEPTH: 10 FT 10 IN; LENGTH: 24 FT 6 IN	D1005	C1635		VOC: 500 PPMV (5) [RULE 1176; 9-13-1996]	H23.21, K67.21
A/N 395513 471291					
OIL WATER SEPARATOR, FIXED COVER, SUMP SECTION, WIDTH: 5 FT; DEPTH: 10 FT 10 IN; LENGTH: 3 FT	D1006	C1635		VOC: 500 PPMV (5) [RULE 1176; 9-13-1996]	H23.21
A/N 395513 471291					
CARBON ADSORBER, TWO (2) IN PARALLEL, TWO (2) IN SERIES, 150-LBS, 1000 LBS CARBON EACH	C1635	D1004 D1005 D1006			D90.1, D90.2, E128.1, E153.1, K67.16
A/N 395513 471291					

BACKGROUND

BP West Coast Products LLC (Facility ID 131003) has submitted two applications for Alteration/Modification of Carbon Adsorbers permitted in Process 15: Oil Water Separation; System 4: Waste Water Treatment System No. 7 and Process 15: Oil Water Separation; System 5: Waste Water Treatment System No. 8. A Title V permit was issued to this facility on September 1, 2009. The subject equipment is disposable/rechargeable carbon adsorption canisters used to control VOC emissions from various wastewater storage and treatment equipment. The applications are intended to accomplish the following:

- Standardize carbon canister capacity at 1,000 lbs,
- Standardize carbon canister connection information (i.e. amend to series connection), and

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- Simplify and standardize permit conditions applicable to these carbon adsorber units.

The facility proposes to use carbon adsorption trains, consisting of two carbon canisters, each with 1,000 lbs of activated carbon, connected in series. In some cases, carbon adsorption trains already consist of two 1,000 lb carbon canisters, connected in series (e.g. device C1632). In other cases, the weight of carbon canisters will be upgraded to 1,000 lbs each (e.g. devices C1002 and C1635), or the connection will be modified from parallel connection to series connection (e.g. device C1635). The Title V permit will be amended to reflect these modifications.

Originally, BP requested amendment of D90 conditions to allow use of charcoal adapters in VOC emissions monitoring. The charcoal adapter functions to trap non-methane hydrocarbons and would give a measurement of the methane concentration in the gas stream. This concentration would then be subtracted from the total hydrocarbon concentration measurement, to yield a non-methane hydrocarbon result. The District defines VOC as non-methane, non-ethane hydrocarbons. However, the D90 conditions have been amended to allow use of a Grab Sample Technique, as described in Rule 1176 Attachment A. Therefore, BP no longer seeks use of charcoal adapters in VOC measurement.

The facility seeks elimination of condition D90.2 and replacement with condition D90.1. Currently, carbon adsorbers C1002 and C1635 are tagged with condition D90.2, which requires monitoring for VOC emissions on a daily basis. Condition D90.1 requires less frequent VOC monitoring (twice per week). Under this project, the capacity of carbon canisters will be upgrade as follows: for C1002 upgrade from two 360 lb canisters connected in series to two 1,000 lb canisters connected in series, and for C1635 upgrade from two 150 lb canisters connected in parallel to two 1,000 lb canisters connected in series. Use of larger capacity canisters will ensure against VOC breakthrough, even with less frequent monitoring.

Modification of condition E153.1 is sought. It is requested that the condition state what is required when breakthrough occurs. It will be amended to state that when hydrocarbon concentration measurement indicates occurrence of breakthrough, that the canisters will either replaced with new canisters or that the spent carbon in the canisters will be removed and replaced with fresh activated carbon. The replacement activated carbon must have a minimum Butane Activity of 21.1%, measured according to ASTM Method 5742, or a minimum Carbon Tetrachloride (CTC) Activity of 60%, as measured according to ASTM Method 3467. By specifying characteristics of fresh activated carbon in the condition, the need for listing of manufacturer/model number of carbon canisters in the equipment description is eliminated, since it is ensured that the replacement activated carbon will function effectively.

The permit history of the equipment is shown in the table below:

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Permit History

Equipment	Permit/AN	Date	Permit Action
D994, D995, D997, D998, D999, C1002, C1632, D1634 (Process 15, System 4)	F92371/395598	9/13/07	<p>Waste Water Treatment System No. 7 is currently permitted under Permit No. F92371 (A/N 395598), issued on September 13, 2007. Under this application the equipment underwent ownership change from ARCO Products Co. to BP West Coast Products LLC. The transfer of ownership of the facility occurred on January 1, 2002.</p> <p>This equipment was issued a Permit to Construct under A/N 283127 on January 26, 1994. Under this application Waste Water Treatment System No. 7 was modified by the replacement of the floating covers with fixed covers and addition of Lift Station No. 7 (venting to carbon adsorption), and addition of three stormwater transfer pumps, process wastewater transfer pump, oil skim pump, two tank evacuation pumps, two spill containment transfer pumps, and a tank containment surge vessel.</p> <p>Previously, the equipment was permitted under Permit No. D60025 (A/N 268125) issued on August 12, 1992. The modification processed under this application involved addition of two carbon adsorber canisters for VOC control and reclassification of the forebay as a wastewater separator.</p> <p>Previously, the equipment was permitted under Permit No. D50674 (A/N 253965) issued on April 1, 1992. Under this application, Tank Nos. 19 and 20 were added to the wastewater treatment system.</p> <p>Previously, the equipment was permitted under Permit No. D38503 (A/N 227849) issued on May 20, 1991. This application involved an air pollution control project consisting of installation of gasketed fixed covers on the separator forebay and outfall/spillway and rigid floating covers on separator bays.</p> <p>Previously, this equipment was permitted under Permit No. M29329 (A/N C35267) issued on February 1, 1983.</p> <p>Previous to this, the equipment was permitted under Permit No. P44514 (A/N A66338) issued on August 2, 1971.</p>
	283127, PC Issued	1/26/94	
	D60025/268125	8/12/92	
	D50674/253965	4/1/92	
	D38503/227849	5/20/91	
M29329/C35267	2/1/83		
P44514/A66338	8/2/71		
D1004, D1005, D1006, C1635 (Process 15, System 5)	F96648/395513	4/25/08	<p>Waste Water Treatment System No. 8 is currently permitted under Permit No. F96648 (A/N 395513), issued on April 25, 2008. Under this application the equipment underwent ownership change from ARCO Products Co. to BP West Coast Products LLC. The transfer of ownership of the facility occurred on January 1, 2002.</p> <p>A Permit to Construct was issued for this equipment on January 29, 1992, under A/N 251365. Under this application the wastewater separator, equipped with a fixed cover, is vented to carbon adsorption drums for VOC control.</p> <p>Previously, this equipment was permitted under Permit No. M40558 (A/N 119183) issued on October 12, 1984. Under this application a 20 HP pump was replaced by a 47 HP submerged centrifugal pump, to better handle stormwater runoff.</p> <p>Previous to this, the equipment was permitted under Permit No. P67136 (A/N C00594), issued on July 26, 1976. Under this application a 20 HP pump was added to this system.</p>
	251365, PC Issued	1/29/92	
	M40558, 119183	10/12/84	
	P67136, C00594	7/26/76	

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District records of Notices of Violation (NOV) or Notices to Comply (NTC) issued to the BP Carson Refinery over the past three years were reviewed. No NOV's or NTC's were issued for the subject equipment over the past three years.

PROCESS DESCRIPTION

The subject equipment includes carbon adsorbers, used to control VOC emissions from vent streams associated with the wastewater treatment process. These devices serve as air pollution control equipment for Oil-Water Separators and Sumps in wastewater service (i.e. devices subject to District Rule 1176). Each carbon adsorber system will be upgraded of two carbon canisters, each with 1000 lbs of activated carbon, connected in series. These systems control VOC emissions, by capturing VOC through adsorption on the surface of activated carbon granules. They are not regenerated on-site; the spent carbon is sealed and then transported off-site for re-activation or disposal.

The carbon canisters contain activated carbon, made of either bituminous coal or coconut shell, which is used to adsorb hydrocarbon vapors. A minimum control efficiency of 95% was expected. The applicant has sought removal of the carbon manufacturer and model number information from the facility permit (i.e. from the equipment description). The deletion of manufacturer/model number information is granted, since a permit condition is added to ensure that the replacement activated carbon has a minimum Butane Activity (21.4%) or Carbon Tetrachloride Activity (60%), so that the replacement carbon canisters maintain performance standards.

At the BP Carson Refinery, process wastewater is collected and treated through primary oil-water separators, conventional API-type oil water separator, polymer flocculation tanks, and Dissolved Air Flootation (DAF) Units. Wastewater from Treatment Systems No. 1, 4, 6, 7, 8 and 9 is pumped to Tanks 19, 20 and 21. Wastewater Treatment Systems 1, 4, 7, and 9 are designated as Lift Stations and function to pump wastewater to storage tanks. Wastewater Treatment Systems 6 and 8 are designated as Separators and direct wastewater to Treatment System 9, a Lift Station which transports water to tankage. Skimmed oil from the Wastewater Treatment Systems is sent to Tank 83. From Tanks 19, 20, and 21, wastewater is pumped to the No. 9 Oil Separator, then to the No. 5 Oil Trap, followed by No. 1, 2, and 3 Induced Gas Flootation (IGF) Units for final oil-water separation. Water from the IGF Units is sent to the West IGF Pit/East IGF Pit, then to Tank 95, and finally is discharged to the Los Angeles County District sewer. Polymer is injected prior to flow to the IGF Units and Bleach is added after the West IGF Pit. The IGF Units reduce the Oil & Grease (O&G) content from a range of 200 to 2000 ppm, to below the maximum O&G allowed of 75 ppm.

EMISSION CALCULATION

Modification of the carbon adsorbers does not involve an increase in criteria pollutant emissions. In each case, the modifications are expected to result in reductions in VOC emissions from wastewater

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separators and wastewater sumps. All carbon adsorption trains will be upgraded to consist of two canisters, each with 1000 lbs carbon, connected in series. This is expected to offer greater VOC control than carbon adsorption systems with smaller canisters (i.e. < 1000 lbs), or for cases where carbon canisters are connected in parallel.

The potential-to-emit of VOC from the subject equipment is tabulated below:

Potential-to-emit of VOC

Equipment Description	Device ID	Application Under Which Emissions Calculated	Uncontrolled VOC Emissions	Controlled VOC Emissions
Wastewater Treatment System No. 7	P 15, S 4, All Devices	283127	0.59 lbs/hr 14.27 lbs/day 5,209 lbs/yr	0.03 lbs/hr 0.71 lbs/day 260 lbs/yr
Wastewater Treatment System No. 8	P 15, S 5, All Devices	251365	0.01 lbs/hr 0.24 lbs/day 88 lbs/yr	0.01 lbs/hr 0.24 lbs/day 88 lbs/yr

Monitoring for VOC Emissions – Carbon Adsorber C1002

Daily monitoring for VOC emissions from carbon adsorber C1002 was first permitted under A/N 268125. Under this application, VOC emissions from the No. 7 Wastewater Separator were calculated based on a maximum throughput of 1050 gallons per minute, a “Form R-5” emissions factor of 73 lbs/year per 1000 gallons/day of throughput, and 95% control efficiency for carbon adsorber C1002. The calculation is as follows:

$$\text{Uncontrolled VOC emissions} = 1050 \text{ gal/min} \times 1440 \text{ min/day} \times 73 \text{ lbs VOC/yr} / 1000 \text{ gal/day}$$

$$= 110,376 \text{ lbs VOC/yr or } 302 \text{ lbs VOC/day} + 0.79 \text{ lbs/day from tanks}$$

$$\text{Controlled VOC emissions} = 0.05 \times 303 \text{ lbs VOC/day}$$

$$= 16 \text{ lbs VOC/day}$$

This represented VOC emission from the entire Wastewater Treatment System No. 7. Since at that time Wastewater Treatment System No. 7 was served only by one carbon adsorber (C1002), which consisted of two 360 lb canisters connected in series, the facility was required to monitor VOC emissions from the carbon adsorber on a daily basis. However, this system was more recently modified (under A/N 283127) by installation of Lift Station No. 7, which is also equipped with two 1000 carbon canisters connected in series. Therefore, Wastewater Treatment System No. 7 is now served by two carbon trains with a total of 4,000 lbs activated carbon. Further, under A/N 283127 uncontrolled VOC emissions from Wastewater Treatment System No. 7 were calculated to be 14.27 lbs/day (See Attachment #1 for VOC emissions calculation from A/N 283127/395598). Based on the Carbon Life analysis below,

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monitoring of VOC emissions from carbon canisters, twice per week, is sufficient to ensure against breakthrough. Therefore, carbon adsorber C1002 will be tagged with condition D90.1, instead of condition D90.2.

Carbon Life Evaluation for C1002

Total Mass of Activated Carbon = 4000 lbs

Mass VOC captured from wastewater separators/lift stations = 99.89 lbs/week

Mass of VOC collection per mass of Activated Carbon = 20%

Mass of VOC collected by four canisters = 800 lbs

Minimum time before breakthrough = 800 lbs / 99.89 lbs/week = 8 weeks

Therefore, twice weekly monitoring is sufficient to ensure against breakthrough of VOC emissions

Monitoring for VOC Emissions – Carbon Adsorber C1635

Daily monitoring of VOC emissions from carbon adsorber C1635 was first permitted under A/N 251365. Under this application, Wastewater Treatment System No. 8 was equipped with a fixed cover and vented to carbon adsorbers consisting of two 150 lb carbon canisters, connected in series. Under A/N 251365 (Attachment #2 is a copy of the evaluation) VOC emissions of 0.01 lbs/hr, equal to 0.24 lbs/day, from Wastewater Treatment System No. 8 were stated. No justification for daily VOC emissions monitoring from the carbon adsorber is stated in the evaluation. Based on a review of application material, it appears that ARCO may have suggested this monitoring schedule (see Attachment #3 – letter from Abe Johnson of ARCO to Chris Perri of the District). Based on the Carbon Life analysis below, monitoring of VOC emissions from carbon canisters, twice per week, is sufficient to ensure against breakthrough. Therefore, carbon adsorber C1635 will be tagged with condition D90.1, instead of condition D90.2.

Carbon Life Evaluation for C1635

Total Mass of Activated Carbon = 2000 lbs

Mass VOC captured from wastewater separators/lift stations = 1.68 lbs/week

Mass of VOC collection per mass of Activated Carbon = 20%

Mass of VOC collected by four canisters = 400 lbs

Minimum time before breakthrough = 400 lbs / 1.68 lbs/week = 238 weeks

Therefore, twice weekly monitoring is sufficient to ensure against breakthrough of VOC emissions

Toxic Air Contaminant (TAC) Emissions

Since the modifications are expected to improve control of VOC emissions, an improvement in the control of TAC emissions is also expected. There is no potential for increased TAC emissions from the subject equipment.

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RULE EVALUATION

- CEQA:** The CEQA Applicability Form (400-CEQA) indicates that the project does not have any impacts which trigger the preparation of a CEQA document. The carbon adsorber modification project is expected to result in improved VOC control, leading to reductions in emissions. Therefore, the expected impacts of the project on the environment are not significant and preparation of an Environmental Impact Report (EIR) is not required.
- Rule 212:** Rule 212 requires public noticing for a modification of a source at a facility subject to Regulation XX if it is within 1000 feet of a school. The sources are not within 1000 feet of a school. Rule 212 requires noticing when the emission increases exceed any of the daily maxima specified in Rule 212 (g). The Rule 212(g) limit for VOC is 30 lbs/day. The carbon adsorber modification project does not involve an increase in VOC emissions. Public noticing is also required if the modification results in an increase in exposure to Toxic Air Contaminants (TAC) such that the Maximum Individual Cancer Risk (MICR) is greater than 1 in a million (1×10^{-6}) during a lifetime (70 years). The carbon adsorber modification project is not expected to result in an increase in TAC emissions. Therefore, the project will not result in an increase in MICR of greater than 1×10^{-6} . Public noticing is not required for this project and the requirements of Rule 212 are met.
- Rule 401** With proper operation and maintenance, wastewater separators/sumps and carbon adsorbers are not expected to produce visible emissions with a shade as dark as or darker than that designated as Ringelmann No. 1, by the U.S. Bureau of Mines, for a period of 3 minutes in any hour. Therefore, compliance with this rule is expected.
- Rule 402** With proper operation and maintenance, the wastewater separators/sumps and carbon adsorbers are not expected to cause a public nuisance. The project is expected to result in greater control of pollutant emissions, thereby lessening the possibility that this equipment will result in public nuisance.
- Rule 404** This rule limits the particulate matter concentration to limits according to vent flows, with a maximum of 0.196 grains per dscf. The wastewater separators/sumps and carbon adsorbers are not expected to be a source of particulate matter. Therefore, compliance with this rule is expected.
- Rule 464** This rule requires that Wastewater Separators (such as separator basins, skimmers, grit chambers, and sludge hoppers) be equipped either with a solid cover with all openings sealed or with a floating roof which has closure seals. The space between the closure seals and the chamber wall must not exceed 1/8 inch for a cumulative length of 97% of the perimeter of the compartment and no gaps may exceed 1/2 inch. Gauging and

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sampling devices must be equipped with a cover or lid which remains closed except during gauging or sampling. Separator forebays are required to be covered. Skimmed oil or tar from a wastewater separating device must be charged to a process unit with feed, or be transferred to a container which has a Permit to Operate issued by the District. Wastewater Separators at this facility are expected to continue to comply with the requirements of this rule. The project involves upgrade of carbon adsorbers, thereby resulting in improved VOC control efficiency.

Reg IX

The standards stated under 40 CFR 60 Subpart QQQ applies to petroleum wastewater systems which have been constructed, modified, or re-constructed after May 4, 1987. Requirements are stated for drain components and oil-water separators. Standards for wastewater separators include that they be equipped with a fixed roof, that the vapor space under the fixed roof not be purged unless vapor is directed to a control device, that roof doors and openings be gasketed and kept closed, that roof seals be inspected semiannually and repaired within 15 days of a problem being identified, that each oil-water separator with a design capacity to treat more than 250 gpm of wastewater be equipped with a closed vent/control system meeting requirements of 60.693-5.

Previous Permit to Construct evaluations determined that some of standards for closed vent systems under 60.693-5 are not applicable. The standards which are met include that the carbon adsorbers control VOC emissions by 95% or greater, that the closed vent/control device be operated continually, and that the closed vent system not have emissions exceeding 500 ppm above background, and that all gauging and sampling devices be gas tight. The standards deemed not applicable in previous Permit to Construct evaluations include that the closed vent system be purged to the control device (i.e. that a blower be used to direct vent vapor to the control device) and that a flow indicator be installed in the vent stream leading to the control device to ensure vapors are routed to the device. The sumps/carbon adsorbers are set up so that 100% of vent vapors are directed/controlled by the carbon adsorbers (i.e. the systems are not be equipped with a vent bypass). Therefore, purge devices (typically required when sumps are equipped with a gas blanket system) and flow indicator (typically required when the system is equipped with a vent bypass) are not applicable.

This project, to standardize carbon adsorbers and permit conditions associated with carbon adsorbers, is expected to result in enhanced VOC control (due to use of larger capacity carbon canisters). Under 60.695 monitoring of carbon canisters for VOC concentration is required at intervals no greater than 20% of the design carbon replacement interval. The carbon replacement analysis above indicates that for the subject carbon adsorbers the minimum carbon replacement interval is 8 week. Therefore, monitoring at a minimum frequency of every 1.6 weeks is required. Monitoring twice

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weekly will meet this requirement. Continued compliance with the requirements of this regulation is expected.

Rule 1173 This rule specifies leak control, identification, operator inspection, maintenance, and recordkeeping requirements for valves, pumps, compressors, pressure relief valves, and other components from which fugitive VOC emissions may emanate. The pumps, piping and instrumentation in skim oil service are subject to the requirements of this rule. The facility will continue to perform fugitive VOC emissions testing and repair on these components. Per 1173(l)(1)(D), components handling fluids with a VOC content of ten percent or less are not subject to the requirements of this rule. The uncontrolled VOC content in vent piping from wastewater systems to carbon adsorbers, is considered to be << less than the content of 10 percent and is therefore not subject to the requirements of this rule.

Rule 1176 System condition S13.6 requires compliance with this rule. This rule limits the concentration of VOC from wastewater systems and closed vent systems to 500 ppm. Sumps and wastewater separators are to be equipped with a floating cover with seals at the periphery of the cover, or a fixed cover venting to an Air Pollution Control (APC) device, or an alternate equivalent device. Sump and wastewater separator are to have covers impermeable to VOCs and free of holes/tears/openings, drains on covers which cover at least 90% of the open area, closed gauging and sampling covers with no visible gap between the cover and separator, closed hatches free of gaps, a cover whose perimeter is free of gaps with the foundation to which it is attached, and floating roofs meeting gap requirements (gap not to exceed 1/8th inch for a cumulative length of 97% of the perimeter of the separator and no gap shall exceed 1/2 inch). The APC is required have a minimum control efficiency of 95% by weight, as determined with an annual performance test, or to limit the VOC concentration at the APC outlet to a maximum of 500 ppm, as determined through monthly testing. The subject wastewater separators and lift stations have fixed cover venting to APC devices, with a minimum of 95% VOC control expected. Testing of the carbon adsorber exhaust at a frequency of twice per week ensures that VOC concentrations are maintained below 500 ppm. Thus, the subject equipment will continue to operate in compliance with this rule.

Sumps which store wastewater with a VOC content of under 5 mg/liter (or 0.005 gram/liter) are exempt from the requirements of this rule. Sump D999 is limited to storing material with VOC content under 0.005 grams/liter and therefore is exempt from the control requirements under this rule. The sump will be tagged with condition D90.9, which requires annual testing of wastewater for VOC content, to ensure it is below the limit of 0.005 gram/liter.

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Reg XIII This rule contains requirements including that equipment meet standards considered Best Available Control Technology (BACT), that emissions offsets in the form of Emission Reduction Credits (ERC)s be provided for increase in non-attainment air contaminant emissions, and that modeling be conducted to assess the impacts of the project on ambient air quality. The carbon adsorber modification project is expected to result in enhancement in VOC control and therefore does not involve an increase in criteria pollutant emissions. Therefore, this project is exempt from requirements of Reg XIII.

Rule 1401 This rule has requirements that the project not result in an increase in Maximum Individual Cancer Risk (MICR) of 1×10^{-6} , if T-BACT is not applied, or 10×10^{-6} if T-BACT is employed. Chronic and acute hazard indices are not to exceed 1.0, and cancer burden is to be limited to 0.5. The carbon adsorber modification project is not expect to result in an increase in TAC emissions and therefore, per 1401(g)(1)(B) for modifications with no increase in risk, it is exempt from the requirements of this rule.

Reg XVII This rule applies to emissions of pollutants from the facility for which attainment of ambient air quality standards has been achieved in the South Coast Air Basin (NO₂, SO₂, lead and CO). The wastewater separators/sumps, and carbon adsorbers will not emit these pollutants. Therefore, Reg XVII requirements do not apply to this modification.

Reg XX The facility is a part of the District's RECLAIM program and therefore is subject to RECLAIM requirements. However, the subject equipment (wastewater separators/sumps and carbon adsorbers) does not emit NO_x or SO₂ and therefore RECLAIM requirements do not apply to this project.

Reg XXX The facility is subject to Reg XXX and a Title V permit was issued on September 1, 2009. The project is a Significant Permit Revision of the Title V permit since it involves a condition change to less frequent VOC monitoring of carbon adsorbers. As a Significant Permit Revision, the project is subject to a 30 day public notice and a 45 day EPA review and comment period.

Rule 3006 addresses public notice requirements. It requires that a public notice be published in a newspaper serving the county where the source is located, or that a notice be sent by mail to those who request in writing to be on a list, and any other means as determined by the Executive Officer to ensure adequate notice to the affected public. This rule requires that the notice contain the following:

- i) The identity and location of the affected facility;
- ii) The name and mailing address of the facility's contact person;
- iii) The identity and address of the South Coast Air Quality Management District as the permitting authority processing the permit;

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- iv) The activity or activities involved in the permit action;
- v) The emissions change involved in any permit revision;
- vi) The name, address, and telephone number of a person whom interested persons may contact to review additional information including copies of the proposed permit, the application, all relevant supporting materials, including compliance documents as defined in paragraph (b)(5) of Rule 3000, and all other materials available to the Executive Officer which are relevant to the permit decision;
- vii) A brief description of the public comment procedure; and,
- viii) The time and place of any proposed permit hearing which may be held or a statement of the procedure to request a proposed permit hearing if one has not already been requested.

The District plans to meet all public notice and EPA review and comment requirements for this project. Compliance with this regulation is expected.

40 CFR 63, Subpart CC This regulation defines a Group 1 Wastewater Streams as a stream which has a total annual benzene loading of 10 megagrams per year or greater, has a flow rate of 0.02 liters per minute or greater and a benzene concentration of 10 ppm or greater. Group 1 Wastewater Streams are required to meet applicable standards under 40 CFR Subpart FF, sections 61.340 through 61.355. The subject wastewater separators/sumps and carbon adsorbers are not classified as Group 1 Wastewater Streams and are therefore regarded as Group 2 Wastewater Streams. As such, they not required to meet any control standards or work practices standards under this regulation. Group 2 Wastewater Streams are subject to recordkeeping requirements only.

RECOMMENDATIONS

Issue the Permit to Operate with the following permit conditions.

S13.6 All devices under this system are subject to the applicable requirements of the following rules or regulations:

<u>Contaminant</u>	<u>Rule</u>	<u>Rule/Subpart</u>
VOC	District Rule	464
VOC	District Rule	1176

[RULE 1176, 9-13-1996; RULE 464, 12-7-1990]

[Systems subject to this condition: Process 15, System 4, 5]

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- B89.1 The operator shall not use water with a VOC content greater than 0.005 grams per liter, including water and exempt compounds.
- [RULE 1176, 9-13-1996]
- [Devices subject to this condition: D999]
- C266.1 The operator shall install and maintain a pressure relief valve set at 4 inches water column.
- [RULE 1303(b)(2)-Offset, 5-10-1996]
- [Devices subject to this condition: D997]
- D90.1 The operator shall periodically monitor the VOC concentration at the outlet of the carbon adsorption system according to the following specifications:
- The operator shall use EPA reference method 21 to monitor the parameter
- The operator shall calibrate the instrument used to monitor the parameter in ppmv methane.
- Alternately, the operator may use the District Grab Sample Method, as specified in Rule 1176, to measure the VOC concentration.
- The operator shall monitor twice every week.
- [RULE 1176, 9-13-1996; RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]
- [Devices subject to this condition: C1002, C1632, C1635]
- ~~D90.2 The operator shall periodically monitor the VOC concentration at the outlet of the second carbon according to the following specifications:~~
- ~~The operator shall use a District approved Organic Vapor Analyzer (OVA) to monitor the parameter.~~
- ~~The operator shall use EPA reference method 21 to monitor the parameter~~

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~~The operator shall calibrate the instrument used to monitor the parameter in ppmv methane.~~

~~Alternately, the operator may use the District Grab Sample Method, as specified in Rule 1176, to measure the VOC concentration.~~

~~The operator shall monitor once every day.~~

~~[RULE 1176, 9-13-1996; RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]~~

~~[Devices subject to this condition: C1002, C1635]~~

D90.9 The operator shall sample and analyze the VOC content in each inlet fluid to the sump according to the following specifications:

The operator shall analyze once per year according to EPA Test Method 8240, or equivalent test method.

[RULE 1176, 9-13-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition: D999]

E127.1 The operator shall keep gauge/sample hatches closed except during actual gauging/sampling operation.

[RULE 1176, 9-13-1996]

[Devices subject to this condition: D997]

E128.1 The operator shall keep all spent carbon in a tightly covered container which shall remain closed except when it is being transferred into or out of the container.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition: C1002, C1632, C1635]

E153.1 The operator shall change over the carbon in the adsorber whenever breakthrough occurs:

For the purpose of this condition, breakthrough occurs when the hydrocarbon monitor reading indicates a concentration of 500 ppmv at the outlet of the second carbon. If

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breakthrough occurs, the spent carbon adsorber shall either be replaced with an identical unit containing fresh activated carbon or the spent carbon shall be removed and replaced with fresh activated carbon.

The replacement activated carbon shall have a Butane Activity of not less than 21.4%, as measured according to ASTM Method 5742, or a Carbon Tetrachloride (CTC) Activity of not less than 60%, as measured by ASTM Method 3467.

To replace the carbon adsorber, the operator shall remove the first carbon canister, replace it with a fresh carbon adsorber or rotate the second adsorber in series to first, and put in a new second carbon adsorber.

The operator shall change over the carbon in the adsorber, at minimum, on an annual basis, without respect to whether breakthrough has occurred.

[RULE 1176, 9-13-1996; RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition: C1002, C1632, C1635]

E166.1 The operator shall keep all openings from this equipment closed when in use except for maintenance or repair.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition: D997]

H23.14 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	40CFR60, SUBPART	QQQ

[40CFR 60 Subpart QQQ, 10-17-2000]

[Devices subject to this condition: D994, D995, D997, D998]

H23.21 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
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VOC	District Rule	1176
VOC	District Rule	464
VOC	District Rule	1123

[RULE 1123, 12-7-1990; RULE 1176, 9-13-1996; RULE 464, 12-7-1990]

[Devices subject to this condition: D997, D1004, D1005, D1006]

K67.16 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Monitor and replacement of carbon canister

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition: ~~C1002, C1632, C1635~~]

~~K67.21 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):~~

~~The operator shall determine the true vapor pressure of each material stored in the equipment by one of the following methods: 1) sample and test the material stored, 2) derive the vapor pressure using engineering calculations, or 3) maintain on file a copy of the Material Safety Data Sheet (MSDS) of material stored.~~

~~Records of material stored, and their MSDS if applicable, shall be retained for a period of five years and made available to the Executive Officer upon request.~~

~~[RULE 1303(b)(2) Offset, 5-10-1996; RULE 3004(a)(4) Periodic Monitoring, 12-12-1997]~~

~~[Devices subject to this condition: D1005]~~

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Attachment #1 – VOC Emissions Calculation under A/N 283127/395598

Uncontrolled emissions due to evaporation from the top of lift stations, separators, and overflow weirs are calculated using mass transfer correlations found in AP-42. Controlled emissions were then calculated using 95% control provided by the carbon adsorbers.

The VOC emissions calculation below is for Wastewater Treatment System No. 1, 4, 7, and 9.

Lift Station Emissions Rate, N (g/s)

$$N \text{ (g/s)} = K \times C_L \times A$$

Where:

K = overall mass transfer coefficient = 0.0647E-3

C_L = concentration of organics in water = 5 mg/liter

A = wastewater surface area = 1056 square feet = 98.11 square meters

$$N \text{ (g/s)} = 0.0647E-3 \times 5 \text{ g/1000} \times 98.11$$

$$\begin{aligned} &= 0.0317 \text{ g/s} \\ &= 0.2519 \text{ lbs/hr} \\ &= 6.05 \text{ lbs/day} \end{aligned}$$

Weir Emissions Rate, N (g/s)

$$N \text{ (g/s)} = (1 - \exp[-K_D]) \times Q \times C_0$$

Where:

K_D = overall mass transfer coefficient = 0.1471

Q = volumetric flow rate = 0.0631 m³/s

C₀ = initial organic concentration in water = 5 g/m³

$$\begin{aligned} N \text{ (g/s)} &= (1 - \exp[-0.1471]) \times 0.0631 \times 5 \\ &= 0.0432 \text{ g/s} \end{aligned}$$

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= 0.3425 lbs/hr

= 8.22 lbs/day

Total Uncontrolled Emissions = 6.05 + 8.22 = 14.27 lbs/day, or 0.59 lbs/hr

Total Controlled Emissions = 0.71 lbs/day, or 0.03 lbs/hr