EVALUATION FOR PERMIT TO CONSTRUCT/OPERATE

APPLICANT'S NAME: OC WASTE & RECYCLE,PRIMA DESHECHA LAND

MAILING ADDRESS: 300 N FLOWERST , STE 400
SANTA ANA, CA 92703

EQUIPMENT ADDRESS: 32250 LA PATA RD, SAN JUAN CAPISTRANO, CA 92675

EQUIPMENT DESCRIPTION:

Fuel Storage and Dispensing Facility Consisting of:

1) 1 - GASOLINE ABOVEGROUND STORAGE TANK, CONTAINMENT SOLUTIONS HOOVER VAULT (G-70-194), RECTANGULAR, 7' - 9" L. X 5' -7 " W. X 4' -9 " H., CAPACITY - 1,000 GALLONS, WITH A PRESSURE/VACUUM RELIEF VALVE AND SUBMERGED FILL TUBE .

2) 1 - GASOLINE NOZZLE DISPENSING 1 PRODUCT ON A TANK TOP MOUNTED DISPENSER , EQUIPPED WITH PHASE II VAPOR RECOVERY SYSTEM, BALANCE RETRACTOR (G-70-52-AM)

BACKGROUND HISTORY:

This application was submitted for a new installation on 3/31/2009. The equipment will be installed as soon as the operating permit is approved and received by the applicant. The facility's proposed normal operating schedule is as follows: 8 hours/day, 7 days/week, 30 days/month and 52 weeks/year. This is a new facility with no existing compliance history. There are no records of recently issued violation notices found in the Compliance database.

PROCESS DESCRIPTION:

The gasoline storage and dispensing facility is used to store and dispense unleaded gasoline at this landfill site. The gasoline is then dispensed into the fleet motor vehicle fuel storage tanks. The phase I and II vapor recovery systems described above are required by Rule 461 and qualify as Best Available Control Technology (BACT) in Rule 1303 and T-BACT (Toxics BACT) in Rule 1401.

EMISSION CALCULATIONS:

The hydrocarbon and benzene emissions from storage tank filling and motor vehicle refueling operations are estimated by using appropriate emission factors summarized in the following table. These emission factors were developed by the District's Planning Division.

I. Emission Factors and Control Efficiencies

The following table summarizes the uncontrolled ROG emission factors in pounds per 1,000 gallons of gasoline throughput, benzene content of gasoline, and control efficiencies:

Emission Factors and Control Efficiencies for Aboveground Tanks

Process Type	Uncon. ROG (Lbs/1000 Gals)	Benzene Content of GA	Control Efficiency
Loading	8.400	0.3 wt%, Vapor	95%
Breathing	0.212	0.3 wt%, Vapor	75%
Refueling*	3.948	0.3 wt%, Vapor	96%
Spillage	0.420	1.0 wt%, Liquid	0%

**Assumes a more realistic 96% control efficiency for Phase II recovery system.*

II. Calculations

The following equations are used for calculating ROG and Benzene emissions from gasoline (GA). The emission factors have been modified from the CAPCOA ones to fit District specific assumptions:

Net Increased Throughput = Proposed throughput - Total permitted throughput prior to the modification or average throughput for the last two years

ROG, uncontrolled = EF (Lbs-ROG/1,000 Gals-GA) x Proposed GA Throughput (1,000 Gals/Month)
ROG, controlled = ROG, uncontrolled x Control Efficiency

Benzene, uncontrolled = ROG, uncontrolled x Benzene Content in GA
Benzene, controlled = ROG, controlled x Benzene Content in GA

Total Emission Increase - Aboveground Tanks

Proposed GA Throughput (Gals/Month)	10000
Average GA Throughput (Gals/Month)	0
Net GA Throughput (Gals/Month)	10000

The total emissions are as follows:

Process Type	ROG, R1 (Lbs/Month)	ROG, R2 (Lbs/Month)	Benzene, R1 (Lbs/Month)	Benzene, R2 (Lbs/Month)
Loading	84.00	4.20	0.25	0.01
Breathing	2.12	0.53	0.01	0.00
Refueling	39.48	1.58	0.12	0
Spillage	4.20	4.20	0.04	0.04
Total ROG	129.80	10.51	0.42	0.06

III. Summary of Emissions

	Total ROG		Total Benzene	
	R1	R2	R1	R2
Monthly (lb/mo)	129.80	10.51	0.42	0.06
30-day average (lb/day)	4.33	0.35	0.01	0.00
Hourly (lb/hr)	0.54	0.04	0.00	0.00

CANCER RISK ASSESSMENT:

From gasoline storage and dispensing operations, benzene is the only toxic emittant that has significant effect to the maximum individual cancer risk (MICR). Using the CAPCOA provided risk values, the staff in the District's Planning Division prepared reference MICR's for different scenarios, i.e., for underground and aboveground tanks, and for residence and workers. These MICR's are tabulated for different downwind distances from a permit unit that is located in West LA with annual gasoline throughput of one million gallons.

Once a reference MICR is determined for a given downwind distance, it has to be adjusted by using the MET factor to reflect the meteorological conditions of a permit unit's location and the actual fuel throughput of a permit unit.

The following is the parameters used for calculating the MICR for this application. The distances are from the center of emission source to the nearest receptor areas:

Tank Type	= Aboveground
GA Throughput (MMGals-GA/Year)	= 0.1200
Facility Zone	= 21
MET Factor	= 0.45
Downwind Distance to Residence (Meters)	= 1294
Downwind Distance to Workers (Meters)	= 1712

A reference MICR is determined for a given downwind distance in the following manner:
1. If the downwind distance is less than or equal to mimimum pre-defined distance, use the MICR at the minimum distance.
2. If the downwind distance is greater than or equal to maximum pre-defined distance, use the MICR at the maximum distance.
3. Find MICRs two distances, i.e., one for nearest higher distance and the other one for nearest lower distance, and interpolate them.

MICR, ref = MICR, low + [(MICR, high -MICR, low) / (High Dist - Low Dist)]
* (Downwind Dist - Low Dist)

where,

MICR, ref	= Reference MICR at a given downwind distance
MICR, low	= MICR at a lower interpolate distance
MICR, high	= MICR at a higher interpolate distance
Low Dist	= Lower interpolate distance
High Dist	= Higher interpolate distance
Downwind Dist	= Given downwind distance

MICR - Aboveground Tanks

MICR for Residences
Reference MICR [in-a-million / (1 MMGal-GA/Year)]
= 0.010

Adjusted MICR (in-a-million)
= (Reference MICR) x (MET factor) x (Annual Fuel Throughput)
= 0.010 x 0.45 x 0.1200 = 0.001

MICR for Workers
Reference MICR [in-a-million / (1 MMGal-GA/Year)]
= 0.002

Adjusted MICR (in-a-million)
= (Reference MICR) x (MET factor) x (Annual Fuel Throughput)
= 0.002 x 0.45 x 0.1200 = 0

Calculation for Non-Cancer Health Effects:
The chronic and acute non-cancer health effects for benzene, xylene and toluene are not being calculated. This is based on the CAPCOA Gasoline Service Station Industrywide Risk Assessment Guidelines, Appendix I, finding that the benzene cancer risk of 10 in a million will be exceeded far sooner that the Hazard Index for benzene, xylene or toluene.

Modeling Assumptions:
The modeling assumes the generic station operates 24 hours/day, with 80% of the emissions occurring between 6:00 AM and 8:00 PM, and the remaining 20% of the emissions occurring between 8:00 PM and 6:00 AM. In addition, the refueling and spillage emissions were modeled as volume sources and the loading and breathing emissions as point sources (Sample ISCST3 model input files for the generic retail station are documented in AQMD Industrywide Guidelines).

Risk Calculations:
The revised risk calculation for 1,000,000 gallons a year throughput for the different distances (20, 25, 30....1000 meters) are based on the benzene inhalation cancer potency factor of 0.1/(mg/kg-day).

RULES EVALUATION:

Rule 212	This project is not located within 1,000 feet of a K-12 school and not subject to the public notification requirements of section (c) (1). This project does not result in significant emission increases and therefore, not subject to the public notification requirements of sections (c)(2) and (g).
Rule 461	All gasoline and methanol (if any) tanks are equipped with CARB Phase I vapor controls. All tanks are also equipped with submerged fill tubes. All nozzles serving the gasoline and methanol, if any, tanks are equipped with Phase II vapor controls. Therefore, this facility complies with Rule 461.
Rule 1170	The facility does not have any underground storage tanks. Therefore, it is exempted from the provisions of this rule.
Rule 1401	The facility's MICR to the most sensitive area is 0.0005 in-a-million. The facility complies with this rule.
Rule REGXIII	The fuel dispensing operation filed under this application complies with the BACT requirements and the net VOC emission increase from this facility is less than 0.5 pound per day calculated based on a 30-day average. An offset is not required before a permit to construct/operate can be issued. Modeling is not required for VOCs. The facility complies with the requirements of Reg XIII.

Reference MICR Chart - Aboveground

(a) MICR for Residential Areas - Aboveground Tanks per One Million Gallons of Gasoline

Dist(m)	20	25	30	40	50	60	70	75	80	90
MICR	7.612	5.776	4.539	3.006	2.129	1.584	1.224	1.088	0.974	0.793

Dist(m)	100	125	150	175	200	250	300	350	400	450
MICR	0.659	0.442	0.318	0.240	0.188	0.125	0.089	0.067	0.053	0.043

Dist(m)	500	600	700	800	900	1000
MICR	0.035	0.025	0.019	0.015	0.012	0.010

(b) MICR for Commercial Areas - Aboveground Tanks per One Million Gallons of Gasoline

Dist(m)	20	25	30	40	50	60	70	75	80	90
MICR	1.502	1.14	0.896	0.593	0.42	0.313	0.241	0.215	0.192	0.157

Dist(m)	100	125	150	175	200	250	300	350	400	450
MICR	0.13	0.087	0.063	0.047	0.037	0.025	0.018	0.013	0.01	0.008

Dist(m)	500	600	700	800	900	1000
MICR	0.007	0.005	0.004	0.003	0.002	0.002

MET Factors for Facility Zones

Zone	1	2	3	4	5	6	7	8	9	10	11	12
MET	0.45	1.00	0.69	0.97	0.51	0.56	0.59	0.64	0.65	1.18	0.65	0.71

Zone	13	15	16	17	18	19	20	21	22	23	24	25
MET	0.70	0.70	0.58	0.57	0.60	0.45	0.60	0.45	0.78	0.78	0.78	0.78

Zone	26	27	28	29	30	31	32	33	34	35	36	37	38
MET	0.78	0.78	0.78	0.53	0.73	0.73	0.54	0.54	0.78	1.19	0.54	0.78	1.19