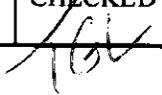


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**OWNER/OPERATOR:**

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KINDERMORGAN LIQUID TERMINALS, LLC  
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CONTACT PERSON: YIJIN WANG  
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**EQUIPMENT LOCATION:**

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CONTACT PERSON: MIKE TILTON  
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**EQUIPMENT DESCRIPTION**

A/N 522418

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM CONSISTING OF:

1. 12 GROUNDWATER EXTRACTION WELLS

(see draft permit)

11. AIR STRIPPER (ME-2), DELTA S5-250FD, PACKED BED, 25'-0" PACKING BED DEPTH, WITH ANTI-SCALANT HOLDING TANK (T-3), CAUSTIC HOLDING TANK (T-4), ACID HOLDING TANK (T-5), RECIRCULATION PUMP (P-17), EFFLUENT PUMP (P-16), AIR BLOWER (B-1), 8000 SCFM, 400 GPM, VENTED TO RETOX.
12. TANK (T-1), TREATED WATER HOLDING TANK, 15,000 GALLON
13. REGENERATIVE THERMAL OXIDIZER (RETOX), ANGUIL, MODEL 50, 5000 SCFM, TWO-CHAMBER REACTOR, 1.2 MMBTU NATURAL GAS OR PROPANE FIRED BURNER, WITH A MINIMUM 30 FOOT STACK WITHOUT RAIN CAP.

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A/N 522419

TV Revision

A/N 523131

BULK TERMINAL VAPOR COLLECTION AND DISPOSAL SYSTEM NO. 1

(see draft permit)

**CONDITIONS:**

SEE SAMPLE PERMITS

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**A/N 522418**  
**CHANGE OF CONDITIONS**  
**GROUNDWATER EXTRACTION AND TREATMENT SYSTEM**

***INTRODUCTION:***

This application was submitted 5-13-11 as a Class III for a change of conditions to an existing equipment permitted under A/N R475765 (permit to construct) for a 100 gpm groundwater extraction and treatment system. The extracted groundwater goes through an oil-water separator (to separate recoverable product and contaminated water), air stripper (to remove VOC's from contaminated water), and a regenerative thermal oxidizer (ReTox), rated at 5000 scfm, to treat VOC air stream from air stripper.

This application is to change condition limiting the flow rate to 5000 scfm to allow for 15-minute averaging.

Since the issuance of the original P/C, construction was completed and start-up occurred December 15, 2009. Unit was tested August 17 -18, 2010 by PES, Inc. per approved AQMD protocol.

This equipment is ready for final P/O.

The facility has no records of complaints, NOV's or NC's during the last three years.

***PROJECT DESCRIPTION:***

The system consists of 12 liquid extraction wells each with its own ½ hp pump, an oil water separator (vented to ReTox when system is ON and to carbons when system is OFF) with two recovered product tanks vented to the ReTox (or carbons when system is OFF), an air stripper (design max 400 gpm liquid and 8000 scfm air flow) vented to the ReTox, feed and treated water tanks, and the ReTox (1.2 mmbtu/hr natural gas fired, up to 5000 cfm design flow).

Groundwater is extracted at 100 gpm and directed to an oil-water separator (which is vented to the ReTox). Recovered product (assumed to be mainly MTBE) is pumped into two product holding tanks (which are vented to the ReTox and/or carbon). A truck unloads the product and the vent stream from the truck loading operations are balanced with the product tank(s). An emergency sump (vented to the ReTox) catches any spills during the truck loading operations.

Remaining water from the oil-water separator is first treated thru bag filters, stored in an equalization feed tank, and then pumped into the air stripper. Waste vapors from the air stripper are directed to a 1.2 mmbtu/5000 scfm ReTox unit to achieve 98% VOC DRE or a VOC emission limit of 20 ppmv.

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Treated water from the air stripper is stored in a treated water holding tank.

Hours of operation are 24 hr/day, 7 days/week.

***CALCULATIONS:***

Test results show the following:

	Run 1	Run 2	Run 3	Prorated (avg)	Permit Limit	GGGGG
Stripper Feed <gpm>	90	95	93	100	100	
Inlet air flow <scfm>	3171	3328	3276	5000	5000	
Inlet TGNMEO <ppm>	2121 (avg. of all runs)	-----	-----			
Inlet TGNMEO <lb/hr>	12.59 (avg. of all runs)					
Exhaust TGNMEO <ppm>	29.9 (avg. of all runs)					≤20 ppm or ≥95%
Exhaust TGNMEO <lb/hr>	0.152 (avg. of all runs)			0.24 DRE = 98.8%	1.48	≤20 ppm or ≥95%
Exhaust Benzene <lb/hr>	0.006	0.007	0.004	0.0095	0.0098	HAP<3 lb/hr
Exhaust MTBE <lb/hr>	0.224	0.182	0.243	0.341	2.09	HAP<3 lb/hr
RTO temp <deg F>	1650	1595	1640		≥1400	

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**Carbon Adsorber Monitoring :**

	Run 1	Run 2	Run 3	Run 4	GGGGG
T-2 Exhaust flow rate	0.082 cfm Avg over all 4 runs				Exempt if flow < 0.177 cfm
Tank T-2 inlet to VGAC 3 & 4 THC as pentane <ppm>	15	70	50	45	
Tank T-2 exhaust VGAC 3&4 THC as pentane <ppm>	Flow too low to measure	Flow too low to measure	Flow too low to measure	Flow too low to measure	
Process Tank inlet VGAC 1&2 THC as pentane <ppm>	No flow	No flow	No flow	No flow	

Note that since the tanks are passively vented to carbon, the flows are too low to measure.

**EVALUATION:**

Rules:

- 212: Public Notice is not required for this application. A notice was performed prior to original P/C issuance and no comments were received.
- 401: No visible emissions are expected.
- 402: No nuisance is expected with proper operational procedures and mitigation measures.
- 403: Fugitive emissions are not expected with water spraying.
- 463: The product storage tanks are not subject to R463 since the capacity of each is 16,380 gallons (less than 19,815 gallons).
- 464: Not applicable since this is not a wastewater system per definition.

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1147: This equipment was manufactured after 1997 and is considered an in-use unit. It will be subject to NOx limitations July 1 of the year the unit is 15 years old. However, it is subject to other requirements such as combustion system maintenance as per manufacturer's schedule and specifications.

1176: Not applicable since the SIC number is 493190.

Reg 13: There is no change in emissions from this change in conditions. Tests show emissions are below those that were determined in the P/C stage (no increase). Emissions calculated during the original P/C stage will be transferred to this new application

*From the previous evaluation (A/N 475765)*

*(a) BACT: This system complies with BACT requirement of a minimum 1400 degrees oxidation temperature.*

*(b) ROG: Not applicable since there will not be a "net emission increase" of ROG from the facility. There was actually be a facility decrease with a concurrent facility modification of the Vapor Recovery System (see P/C evaluation).*

*NOx increase of 4 lb/day is exempt from offsets and modeling since the emissions are from APC equipment (R1304(a)(5)).*

*CO increase of 1 lb/day is exempt from offsets and modeling since it is an attainment contaminant.*

*Facility Compliance: This facility is in compliance with District Rules and Regulations.*

1401: The maximum risk (commercial) from the system is 0.83 in a million. This is less than the allowable 1 in a million. Acute hazard indices for residential and commercial are both less than one. Results show that benzene and MTBE emissions are below permit conditions, so risk is still below threshold.

Reg XXX: This is a TV facility and revised TV Permit (Minor Revision) will be issued after EPA 45-day notice

40CFR63 Subpart GGGGG – NESHAPs :Site Remediation

This facility is subject to requirements of GGGGG. The "remediation material management units", such as the product tanks, the oil-water separator and the sump, are subject to requirements of this regulation. They are fixed roof and are vented to a control device (carbons) with  $\geq 95\%$  DRE or 20 ppm @3%O<sub>2</sub>. The ReTox is guaranteed to meet a 98% destruction efficiency. Results show compliance.

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***CONCLUSION:***

- Source test results show that the equipment complies with permit conditions and GGGGG.
- Applicant request to average inlet flow over 15 minute intervals is acceptable and condition modified to reflect this.
- Condition requiring combustion maintenance added to ensure compliance with Rule 1147.
- Condition requiring fuel meter and timer will be added to ensure compliance with Rule 1147.

This project will meet all District Rules and Regulations. It is recommended that a Permit to Operate be granted subject to the attached conditions.

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**A/N 523131**  
**ALTERATION/MODIFICATION**  
**BULK TERMINAL VAPOR COLLECTION AND DISPOSAL SYSTEM NO. 1**

**INTRODUCTION:**

This application was submitted 6/1/11 as a Class I modification to add "velocity stack" to the secondary burner tip in order to shield the flame from extinguishing out when the quench air is introduced. This equipment is currently covered under Permit to Operate G11317 (A/N 469050).

**PROJECT DESCRIPTION:**

Due to the existing configuration of the burner heads, the flame on the secondary burners can easily be blown out when quench air is introduced. By adding a velocity stack over the tip of the nozzle, a flame pocket can be developed to protect the flame and improve the consistency of the burner performance during second stage combustion.

**CALCULATIONS:**

There is no change in emission due to this alteration. The heat rating and vapor gas flow rate do not change. Emissions from the previous application 469050 will be transferred.

Afterburner No 1:

Pollutant	Lb/hr	Lb/day	30-day lb/day	Lb/yr
NOx	8.2	196.8	200	71635.2
CO	2.2	52.8	54	19219.2
PM	0.47	11.28	11	4105.92
ROG	0.44	10.56	11	3843.84
SOx	0.04	0.96	1	349.44

Previous source test on this equipment (August 2010) show that VOC emissions are 0.012 lb/1000 gal loaded (CARB Method 203.1) and 0.016 lb/1000 gal loaded (SCAQMD Method 25.1). Current permit condition limits the VOC emissions to 0.0565 lb/1000 gallons.

**EVALUATION:**

- 212: Public Notice is not required since there is no emission increase
- 401: Visible emissions are not expected under normal operation.

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402: Compliance records indicate that there are no N/C and NOV's for the past three years, and the facility is expected to continue to be in compliance with the rule.

Rule 462: This equipment controls VOC emissions during loading operations to below 0.08 lb/1000 gallons loaded.

Rule 1149 – Storage Tank Cleaning and Degassing, Amended May 2, 2008

VOC emissions during cleaning and degassing of the storage tanks are to be controlled by one of the control methods (afterburners) mentioned in this rule. Compliance is expected.

Rule 1173 – Fugitive Emissions of Volatile Organic Compounds, Amended Dec. 6, 2002

Rule 1173 categorizes leak types and stipulates maintenance & reporting requirements for fugitive components. The applicant is required to include these components into their existing 1173 inspection and maintenance program. Compliance is expected.

REGULATION XIII – New Source Review

There is no increase in emissions from the afterburner. Reg 13 for the afterburner is not triggered. The same emissions from the previous applications will be entered for this application.

New Source Review of Toxic Air Contaminants

There is no increase of toxic emissions from this modification. Compliance is expected.

40 CFR 63 Subpart R

This control equipment meets the applicable requirement of TOC < 10 mg/L gasoline loaded. Compliance expected.

Title V:

This is a Minor Revision to an existing TV facility permit (rev 1 dated January, 2011). 45-day EPA Notification is required.

***CONCLUSION:***

Issue a **P/C-P/O** after completion of the 45-day EPA notice.