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		<b>TSCA Section</b>	8E
<b>Submitting Organization</b>		AMER PETROLEUM INST	
<b>Contractor</b>			
<b>Document Title</b>		INITIAL SUBMISSION: LTR FROM AMER PETROLEUM INST TO USEPA RE SCE IN CULTURD PERIPHERAL BLOOD LYMPHOCYTES FR RATS EXPOSED TO GASOLINE VAPOR CONDENSATE, W/ATTCHMNT & DTD 042001	
<b>Chemical Category</b>		BASELINE GASOLINE	

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Re: TSCA (8e) Submission for Clean Air Act Section 211(b) Baseline Gasoline Vapor  
Condensate (Lot 99-01)

Dear Sir/Madam:

The 211(b) Research Group (see attached membership list) is an unincorporated group of US fuel and fuel additive manufacturers affiliated by contractual obligation to meet the testing requirements of Section 211(b)(2) and 211(e) of the Clean Air Act. The 211(b) Research Group, on behalf of its member companies, is submitting this notice pursuant to TSCA Section 8(e).

As part of the 211(b) Alternative Tier II test program on the baseline gasoline (CAS No. 86290-81-5), and in accordance with 40 C.F.R. § 79.65, a sister chromatid exchange (SCE) study was performed on cultured peripheral blood lymphocytes from rats (5males, 5 females/group) exposed to baseline gasoline vapor condensate by inhalation at concentrations of 0, 2000, 10,000 and 20,000mg/m<sup>3</sup> (700, 3500 and 7000 ppm respectively), 6 hr/day, 5 days/week for 4 weeks. The positive control compound was cyclophosphamide (5mg/kg) administered intraperitoneally 24 hours prior to harvest.

Statistical evaluation of unaudited SCE data, using one-way analysis of variance followed by Dunnett's test, showed statistically significant ( $p \leq 0.05$ ) increases in sister chromatid exchange in the 10,000 and 20,000 mg/m<sup>3</sup> group females and in the sexes combined with increasing dose response over three treatment groups. Male data showed a similar dose response over three treatment groups but data was not statistically significant. Mitotic indices were comparable for all groups. (Summary table attached).

The sister chromatid exchange assay employs selective staining of paired chromatids to allow visualization of exchanges between segments of chromatid partners at second-division metaphase as a sensitive indicator of DNA perturbation. However, because exchanges occur between sister chromatids, no genetic material is lost, and the significance of these results for potential health hazard assessment is unknown.

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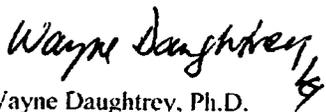
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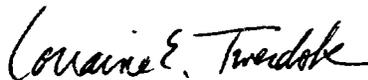
Preliminary results from a micronucleus assay on bone marrow erythrocytes from the same treated animals appear negative. Previous in vivo micronucleus studies with gasoline vapor condensate, as well as wholly vaporized gasoline, gave negative results after a single 6-hour inhalation exposure of 2000 ppm (CIIT Activities, Vol 17, No. 12, December 1997).

When the final report of the SCE study is complete, it will be submitted to the EPA Office of Transportation and Air Quality, Fuels and Energy Division, as part of the requirements of Clean Air Act Section 211(b)(2) and 211(e) (Docket No. A-90-07). If you require further information, please contact Lorraine Twerdok at 202-682-8344, or by mail at this address.

Regards,



Wayne Daughtrey, Ph.D.  
Chair, 211(b) Technical Committee



Lorraine Twerdok, Ph.D., DABT  
Administrator, 211(b) Research Group

Cc: John Brophy, EPA  
Mike Davis, EPA  
Tom Goldsworthy, ILS  
Rich Schlesinger, NYU  
211(b) Research Group Member Companies

**SUMMARY TABLE: Sister Chromatid Exchange in Cultured Peripheral Blood Lymphocytes from Rats Exposed to Gasoline Vapor Condensate**

Dose Group (mg/m <sup>3</sup> )	Males		Females		Combined Sexes	
	Avg SCE ± std. div.	Mitotic Index	Avg. SCE ± std. div.	Mitotic Index	Avg. SCE ± std. div.	Mitotic Index
NegativeControl	5.9±1.6	2.8	5.0±1.4	2.1	5.4±1.6	2.5
2000	6.7±1.9	3.2	6.7±2.2	3.1	6.7±2.1	3.2
10,000	8.1±1.7	3.4	9.0±2.1*	2.7	8.5±2.0*	3.1
20,000	9.2±2.2	2.7	11.4±2.4*	2.1	10.3±2.6*	2.4
Cyclophosphamide 5 mg/kg ip	18.3±6.4*	3.7	19.7±2.7*	2.3	19.0±5.0*	3.0

\*(p ≤ 0.05)

## 211(b) Research Group

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