

BILL RICHARDSON Governor

DIANE DENISH Lieutenant Governor

## NEW MEXICO ENVIRONMENT DEPARTMENT

### Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Phone (505) 476-6000 Fax (505) 476-6030

www.nmenv.state.nm.us



RON CURRY Secretary

SARAH COTTRELL Deputy Secretary

July 12, 2010

RE: SPECIFIC RESPONSE TO COMMENTS, CLASS 2 MODIFICATION REQUEST WIPP HAZARDOUS WASTE FACILITY PERMIT

EPA I.D. NUMBER NM4890139088

#### Dear Commenter:

On July 2, 2010, the New Mexico Environment Department (**NMED**) took final administrative action on a Class 2 permit modification request (**PMR**) to the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit. The Department of Energy Carlsbad Field Office and Washington TRU Solutions LLC (**the Permittees**) submitted this PMR to the Hazardous Waste Bureau on April 14, 2010, seeking to revise volatile organic compound concentrations of concern and update these values using current EPA IRIS data.

NMED approved this PMR with changes for the reasons specified in the attached response to comments. This Class 2 PMR was evaluated and processed in accordance with the requirements specified in 20.4.1.900 NMAC (incorporating 40 CFR §270.42(b)). It was subject to a 60-day public comment period running from April 19, 2010 through June 18, 2010, during which NMED received written specific comments from a total of six individuals and organizations. You are receiving this mailing because you provided public comment on this modification.

Attachment 1 lists all commenters and Attachment 2 incorporates NMED's specific response to all comments. Further information on this administrative action may be found on the NMED WIPP Information Page at <a href="http://www.nmenv.state.nm.us/wipp/">http://www.nmenv.state.nm.us/wipp/</a>>.

Thank you for your participation by submitting comments on these permit modification requests. Please contact Steve Zappe at (505) 476-6051 or via e-mail at <steve.zappe@state.nm.us> if you have further questions or need additional information.

Sincerely,

John E. Kieling l

Manager

Permits Management Program

Attachments

cc: James Bearzi, HWB

Steve Zappe, HWB

David Moody, DOE/CBFO

Farok Sharif, Washington TRU Solutions LLC

Attachment 1 Commenter List

# Comments Received by NMED on WIPP Permit Modifications Modifications Submitted to NMED on: April 14, 2010 Revise VOC Concentrations Class 2 PMR

		Receipt Date		<u>Author</u>	Organization/Citizen	<u># F</u>	Pages
Α	1	07-Apr-10		Don Schrader, Chuck Hosking	Citizens		1
В	2	08-Jun-10		Jerry Fox	Pecos Management Ser	vices	2
С	3	18-Jun-10	*	Joni Arends	CCNS		1
D	4	18-Jun-10	*	Penelope McMullin	Lorretto Community		1
Е	5	18-Jun-10	*	Scott Kovac	Nuclear Watch NM		2
F	6	18-Jun-10	*	Don Hancock	SRIC		7
				6 commenters		Total Pages =	14

<sup>\*</sup> Denotes electronic comment submitted

Attachment 2 Specific Response to Comments

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Comment Number	Commenter/ Affiliation	Topic Area	Commenter	Comment Summary	Response
1.1	Don Schrader & Chuck Hosking, Citizens	Class 2 PMR - VOC Risk	A	Do not allow any increase in the permissible carbon tetrachloride levels in WIPP's operating permit to be renewed this year.	See response to Comment 6.5.
1.2	Don Schrader & Chuck Hosking, Citizens		А		High-level waste is prohibited from acceptance at WIPP by federal law and the Permit, and was not included or requested in the PMR.
2.1	Jerry Fox, Pecos Management Services	Class 2 PMR - VOC Risk	В	Notwithstanding the fact that the risk associated with the current volatile organic compound (VOC) levels being measured in the underground is calculated to be only 6.2 x 10 <sup>-7</sup> excess cancer related deaths compared to the permitted value of 1.0 x 10 <sup>-5</sup> , this Class 2 PMR is justified in order to correct the earlier assumptions regarding the expected carcinogenic content of the TRU waste deposited in WIPP and the resultant VOC repository concentrations at the point of measurement.	The excess cancer risk specified in the Permit is for a chronic occupational exposure over a 10-year period to a non-waste worker located at the surface, just downwind of the Exhaust Shaft. The commenter did not provide the calculations to support his conclusion, but may have assumed an exposure of less than 10 years, which is inconsistent with EPA methodology for determining excess cancer risk from a chronic exposure.
2.2	Jerry Fox, Pecos Management Services	Class 2 PMR - VOC Risk	В	The updated concentration expectations based upon current transuranic waste and VOC monitoring information and experience along with updated IRIS data provide a logical and scientifically acceptable basis for the Class 2 PMR.	See response to Comment 6.4.
2.3	Jerry Fox, Pecos Management Services	Class 2 PMR - VOC Risk	В	While not anticipated, future changes in experienced carcinogenic VOC concentrations and or EPA IRIS data could require another similar Class 2 PMR in which allowable concentrations are adjusted as needed while the calculated risk is maintained within the permitted value of 1.0 x 10 <sup>5</sup> .	Comment noted. No response is required.

Comment Number	Commenter/ Affiliation	Topic Area	Commenter	Comment Summary	Response
2.4	Jerry Fox, Pecos Management Services	Class 2 PMR - VOC Risk	В		The running annual average approach does not lend itself to the use of this alternate approach. The current approach simplifies determining compliance by comparing each VOC with its respective limit.
2.5	Jerry Fox, Pecos Management Services	Class 2 PMR - VOC Risk	В	The above comments notwithstanding, PECOS believes the Class 2 PMR is acceptable and reasonable as presented.	Comment noted. No response is required.
	Joni Arends, Concerned Citizens for Nuclear Safety (CCNS)	Class 2 PMR - VOC Risk	С	We support the June 18, 2010 comments of the Southwest Research and Information Center.	See responses to individual SRIC comments below.
3.2	Joni Arends, CCNS	Class 2 PMR - VOC Risk	С	The Permittees submitted the permit modification as a Class 2 request. 40 CFR 270.42(b). We believe that the complexity of the request regarding reapportionment of risk is not appropriate as a class 2 modification, and at least that part of the request requires the New Mexico Environment Department to classify it as a Class 3 request or to deny the requested reapportionment of risk.	See response to Comment 6.4.
	Penelope McMullen, Loretto Community	Class 2 PMR - VOC Risk	D	We support the June 18, 2010 comments of the Southwest Research and Information Center.	See responses to individual SRIC comments below.

Comment Number	Commenter/ Affiliation	Topic Area	Commenter	Comment Summary	Response
4.2	Penelope McMullen, Loretto Community	Class 2 PMR - VOC Risk	D	The Permittees submitted the permit modification as a Class 2 request. 40 CFR 270.42(b). We believe that the complexity of the request regarding reapportionment of risk is not appropriate as a class 2 modification, and at least that part of the request requires the New Mexico Environment Department to classify it as a Class 3 request or to deny the requested reapportionment of risk.	See response to Comment 6.4.
5.1	Scott Kovac, Nuclear Watch New Mexico (NWNM)	Class 2 PMR - VOC Risk	E	The Permittees submitted the permit modification as a Class 2 request. See 40 CFR 270.42(b). We believe that the complexity of the request regarding reapportionment of risk is not appropriate as a class 2 modification, and at least that part of the request requires the New Mexico Environment Department to classify it as a Class 3 request or to deny the requested reapportionment of risk.	See response to Comment 6.4.
5.2	Scott Kovac, NWNM	Class 2 PMR - VOC Risk	E	We request that the explosion/isolation wall for Panel 5 be built as soon as the panel is filled. This would protect the workers during the remaining waste emplacement activities.	The explosion-isolation wall was not proposed in the PMR and is beyond the scope of the PMR. However, NMED will include language requiring an explosion-isolation wall in the draft permit as changed as part of its Notice of Intent to Present Technical Testimony (NOI)) for the upcoming permit renewal hearing.
5.3	Scott Kovac, NWNM	Class 2 PMR - VOC Risk	E	We request that the current overpack activities for the waste streams containing high levels of carbon tetrachloride continue.	NMED's approval of the Permittees' temporary authorization (TA) request on April 14, 2010 included the requirement to overpack containers with high concentrations of carbon tetrachloride into standard waste boxes or ten drum overpacks in an effort to mitigate emissions. Upon issuance of NMED's final action on this PMR, the TA expires and the requirement to overpack will end. The Permittees will continue to be required to manage containers in a manner protective of human health and the environment. They may choose to continue overpacking these containers, as a component of their overall strategy to manage emissions.
5.4	Scott Kovac, NWNM	Class 2 PMR - VOC Risk	E	We request that carbon tetrachloride mitigation at the generator site continue to be explored.	Comment noted. No response is required.
5.5	Scott Kovac, NWNM	Class 2 PMR - VOC Risk	E	We request that the new regulatory limits for carbon tetrachloride be held to below 500 ppbv.	See response to Comment 6.5.

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5.6	Scott Kovac, NWNM	Class 2 PMR - VOC Risk	Е	Permit Modification Request and the explanation why the modification is needed do not address the actual reason or need. Even at the public meeting in May 2010, the "What Prompted This Change" slide (number 4) does not mention	In the Overview of the Permit Modification Request, the Permittees address the requirement to explain why the modification is needed beginning on page 2 and ending on page 11. At the top of page 4, the Permittees state, "Currently, the concentration of carbon tetrachloride is approaching its concentration of concern." The text and figures on pages 4 through 6 address rising carbon tetrachloride concentrations, and are a part of the basis for submitting the PMR.
6.1	Don Hancock, Southwest Research and Information Center (SRIC)	Class 2 PMR - VOC Risk	F	SRIC has expressed its concerns about the temporary authorization request that accompanied the modification request submitted on March 31, 2010, as well as the temporary authorization request submitted on April 12 with the current modification request. SRIC's letter of April 13, 2010 to Sarah Cottrell and Marcy Leavitt (which NMED received on that date) should be considered as part of SRIC's comments on this modification request.	

Comment Number	Commenter/ Affiliation	Topic Area	Commenter	Comment Summary	Response
6.2	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F		
6.3	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	SRIC also objects to approval of the permit modification request as submitted, because it does not meet the requirements for a class 2 modification. Thus, NMED must deny at least major parts of the request.	See response to specific comments below.
6.4	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	appropriately classified as a class 2 modification and cannot be approved.  The request states that a class 2 modification is appropriate based on 40 CFR §270.42, Appendix I, Item A.4.b. at 2. SRIC strongly objects to a complex permit modification that substantially alters WIPP's	NMED concurs that the reapportionment of risk component of the PMR requires complex calculations and doesn't necessarily fit the basis cited in the PMR as qualifying for a Class 2 PMR. However, reapportionment of risk would not substantially alter the facility or its operations as the commenter states in referencing 40 CFR §270.42(d)(2)(iii). Rather than invoking §270.42(b)(6)(i)(C) at this time (i.e., determine that the PMR follow the procedures of §270.42(c) for a Class 3 due to the complex nature of the change), NMED is approving a less complex portion of the PMR as a Class 2. Additionally, because NMED will include this modification in the draft permit as changed in its NOI for the upcoming permit renewal public hearing, these issues may be raised by one or more parties during that hearing scheduled for August 2010.

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6.5	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F		NMED agrees with the commenter, and is limiting the modification in the PMR to the 2.5 reduction of inhalation cancer risk for carbon tetrachloride in the permit, raising the limit in Table IV.F.2.c from 165 ppbv to 412.5 ppbv. NMED is not incorporating further changes to the concentrations of concern for carbon tetrachloride or other VOCs based upon reapportionment of risk as was proposed in the PMR. See also response to Comment 6.4.
6.6	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	2. The request does not adequately justify the basis for reapportioning risk. The modification request states: "The Permittees have concluded, based on actual repository monitoring data and a projection of the VOCs associated with future waste shipments that the portion of the risk assigned to carbon tetrachloride in the current Permit is underestimated and inconsistent with the actual data. Therefore the risk for each VOC should be revised based on these data." at 4.	This portion of the comment does not require a response.

Comment	Commenter/	Topic Area	Commenter	Comment Summary	Response
Number	Affiliation				
6.7	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F		

Comment Number	Commenter/ Affiliation	Topic Area	Commenter	Comment Summary	Response
6.8	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F		At no time did the cited detections of toluene, methylene chloride, or 1,1,1-trichloroethane approach their respective concentrations of concern, regardless of the number of detections per year. The commenter has not sufficiently explained what would constitute "adequate data" to support any reapportionment. NMED is not approving the Permittees' request to reapportion risk.
6.9	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	VOCs in the future provided in the request, so there is no basis upon which to base any decisions regarding possible forthcoming shipments. Once again, risk cannot be reapportioned based on an unsupported conclusion about future shipments.	NMED's initial apportionment of risk among the original six carcinogenic VOCs was not based upon assumptions about future inventory. Instead, it was based on limiting three of the VOCs to concentration limits not to exceed an acute exposure limit to underground workers in the event of a roof fall in a panel. The remaining three VOC limits were established by apportioning the remaining excess cancer risk evenly such that the cumulative risk from all six VOCs did not exceed an excess cancer risk of 10 <sup>-5</sup> resulting from an occupational exposure to a non-waste worker at the surface. Any reasonable reapportionment of excess cancer risk from carcinogenic VOCs that does not exceed this 10 <sup>-5</sup> occupational exposure limit would be acceptable. NMED is not approving the Permittees' request to reapportion risk.

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6.10	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	historic and future projection data would be voluminous and complicated, and not consistent with the requirements of a class 2 modification.	NMED does not believe it necessary to compile all historic and future projection data as proposed by the commenter. See response to Comments 6.4, 6.7, 6.8, and 6.9. Nevertheless, NMED is not approving the Permittees' request to reapportion risk.
6.11	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	3. The request includes information about toluene that is not consistent with current scientific data. In Tables 1, 2, and 3, the request lists toluene as a non-carcinogen. That classification was made by EPA in 1994, based on two epidemiological studies that "were limited due to the size of the study population and lack of historical monitoring data." http://www.scorecard.org/chemical-profiles/html/toluene.html. However, current scientific evidence in 2010 by the President's Cancer Panel states that carbon tetrachloride, methylene chloride, and toluene should all be classified as suspected carcinogens. http://deainfo.nci.nih.gov/advisory/pcp/pcp08-09rpt/PCP_Report_08-09_508.pdf at A-43 (attached). SRIC strongly objects to toluene being classified as a non-carcinogen as a basis for calculating risk. Instead, overall cancer risk	NMED uses EPA's human health toxicity values as identified in their Integrated Risk Information System (IRIS). The IRIS Quickview page for toluene indicates the last significant revision and review occurred September 23, 2005. Under the heading Carcinogenicity Assessment for Lifetime Exposure and subheading Weight-of-Evidence Narrative, the IRIS Quickview states, "Under the Guidelines for Carcinogen Risk Assessment, there is inadequate information to assess the carcinogenic potential of toluene because studies of humans chronically exposed to toluene are inconclusive, toluene was not carcinogenic in adequate inhalation cancer bioassays of rates and mice exposed for life, and increased incidences of mammary cancer and leukemia were reported in a lifetime rat oral bioassay at a dose level of 500 mg/kg-day but not at 800 mg/kg-day."  Until EPA reassesses toluene and determines it is carcinogenic, NMED will continue to consider it as a non-carcinogen based upon the IRIS assignment of a Reference Concentration for Chronic Inhalation Exposure (RfC).

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6.12	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	4. The request is premised on carbon tetrachloride approaching the concentration of concern of 165 ppbv, which may not occur.  SRIC has long been concerned about the permittees apparent lackadaisical attitude about the rising carbon tetrachloride levels until they discovered the error in calculations, which was reported to NMED on November 17, 2009. The permittees continued to ship containers with significant amounts of carbon tetrachloride, rather than curtailing such shipments. SRIC emphasized on numerous occasions the need to stop shipments of high carbon tetrachloride wastes, but the permittees ignored that repeated commonsense suggestion. Thus, to a great extent, the rising carbon tetrachloride levels are a self-imposed problem that could have been avoided. If shipments with large amounts of carbon tetrachloride had been stopped, then the effectiveness of the various measures that have been taken in the WIPP underground could have been better assessed.	
6.13	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	November 2009, there would have been substantially less carbon tetrachloride at WIPP.	The running annual average is a lagging average, affected by all measurements over the course of the year. Thus, the running annual average would increase in response to adding new higher-than-average measurements as well as removing lower-than-average measurements older than one year.

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6.14	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	Because of the continued shipments with substantial amounts of carbon tetrachloride, additional methods were undertaken to reduce emissions and they have apparently had an effect, as the carbon tetrachloride amounts have not exceeded 165 ppbv running annual average. Thus, it is not clearly established that the modification to raise the concentrations of concerns is needed.  SRIC has not opposed the various efforts to reduce emission – additional bulkheads and installing the GAC system in panel 4. SRIC also has advocated to the Idaho National Laboratory (INL) that it should take additional efforts to reduce the shipments of high carbon tetrachloride wastes. Further, SRIC has not opposed the use of TDOPs as overpacks over the past five weeks, as required by the Temporary Authorization of April 14, 2010.	
6.15	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	allow increased amounts of carbon tetrachloride at WIPP, which, in turn, reduces protection of public health and the environment. Therefore, SRIC believes that some of those methods, such as overpacking high carbon tetrachloride containers, should continue to be used, regardless of the decision on the modification request. Further, SRIC	Increasing the concentration of concern for carbon tetrachloride from 165 ppbv to 412.5 ppbv will allow increased amounts of carbon tetrachloride at WIPP. However, this will not reduce protection of human health and the environment, because the effect will be to maintain the same excess cancer risk as before. This increase is linked solely to EPA changing the inhalation risk factor for carbon tetrachloride from 1.5 E-05 m3/µg to 6.0 E-06 m3/µg, resulting in a risk reduction by a factor of 2.5.  See also response to Comments 5.2 and 5.3.

Comment	Commenter/	Topic Area	Commenter	Comment Summary	Response
Number	Affiliation				
6.16	Don Hancock, SRIC	Class 2 PMR - VOC Risk	F	Conclusion: SRIC agrees that there is justification, because of the changed inhalation unit risk, to raise the concentration of concern for carbon tetrachloride above 165 ppbv, though not to the requested level of 1,660 ppbv. However, the reapportionment of risk for the VOCs has not been adequately supported and cannot be approved. NMED should continue to require use of overpacks for containers with significant amounts of carbon tetrachloride, and it should require installation of the explosionisolation wall when panel 5 is filled.	See response to Comments 6.5, 6.10, and 6.15.