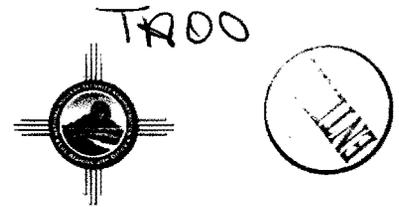


Environmental Programs

Corrective Actions Project
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Los Alamos, New Mexico 87545
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National Nuclear Security Administration
Los Alamos Site Office, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-7203/FAX (505) 665-4504

Date: August 21, 2006
Refer to: EP2006-0761

Mr. James Bearzi
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

SUBJECT: SUBMITTAL OF THE RESPONSE TO THE NOTICE OF DISAPPROVAL FOR THE ADDENDUM TO THE COMPLETION REPORT FOR THE VOLUNTARY CORRECTIVE ACTION USING A SOIL VAPOR EXTRACTION SYSTEM AT AREA OF CONCERN 0-027



Dear Mr. Bearzi:

Enclosed please find two hard copies with electronic files of the "Response to the Notice of Disapproval for the Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027."

If you have questions, please contact Becky Coel-Roback at (505) 665-5011 (becky_cr@lanl.gov) or Bob Enz at (505) 667-7640 (renz@doeal.gov).

Sincerely,

Andrew Phelps, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,

for Leonard A. Trujillo

David Gregory, Federal Project Director
Department of Energy
Los Alamos Site Office

AP/DG/BCR/jr

Enclosure: Two hard copies with electronic files – Response to the Notice of Disapproval for the Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027 (EP2006-0745)



7789

Cy: (w/enc):

B. Coel-Roback, EP-CAP, MS M992 (with CD)
B. Enz, DOE LASO, MS A316 (with CD)
D. Davenport, MS M321 (with CD)
EP-CAP File, MS M992 (with CD)
RPF, MS M707 (with CD)
SAFE S7, MS F674 (without CD)

Cy: (CD only)

L. King, EPA Region 6
P. Reneau, EP-ERSS, MS M992

Cy:(w/o enc)

A. Dorries, EP-ERSS, MS M992
G. Dover, EP-CAP, MS M992
D. McInroy, EP-CAP, MS M992
C. Mangeng, ADEP, MS J591
A Phelps, ADEP, MS J591
D. Gregory, DOE LASO, MS A316
T. Skitbiski, NMED OB
IRM-RMMSO, MS A150

**Response to the Notice of Disapproval for the Addendum to the Completion Report for the
Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027,
Los Alamos National Laboratory EPA ID No: NM0890010515, HWB-LANL-05-023,
Dated July 17, 2006**

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. The comments are divided into general and specific categories, as presented in the notice of disapproval. Los Alamos National Laboratory's (LANL's or the Laboratory's) responses follow each NMED comment.

GENERAL COMMENT

NMED Comment

1. *In the discussion of Human Health Screening Assessment (Section 2.4.1) beginning on page 9 and continuing throughout the Screening Evaluation, the text refers to comparisons between Table 2.4-1 (Screening Evaluation for Noncarcinogenic Contaminants of Potential Concern [COPCs] at Area of Concern [AOC] 0-027) and Table B-1 (Screening Evaluation for Noncarcinogenic COPCs at AOC 0-027 Using 2002 Data).*

For ease of use in the comparison, the heading for Table 2.4-1 should include the vintage of the data (2004) as labeled in Table B-1, and the numbers in bold appearing at the bottom of Table B-1 should include the designation for Hazard Index (HI) as labeled in Table 2.4-1. The Permittees must revise the Tables accordingly so that the format is consistent.

LANL Response

1. Tables 2.4-1 and 2.4-2 have been revised to show the data vintage. Table B-1 has also been revised to indicate hazard indices (HIs) on the bottom row. The revised tables are attached to this response.

SPECIFIC COMMENTS

NMED Comment

1. **Section 1.0, Introduction, page 1, paragraphs 4 and 5:**

Permittees' Statement: *"Depending upon the type of contaminant(s) and the history of a site, either NMED or DOE has administrative authority over work performed by the ENV-RS project. NMED, under the auspices of the State of New Mexico, has authority over sites with hazardous waste or hazardous constituents, including the hazardous portion of mixed waste. Hazardous constituents are regulated under the Resource Conservation and Recovery Act (RCRA). DOE has authority over sites with radioactive contamination."*

“The area of concern addressed in this addendum, AOC 0-027, is not listed in Table A of the Module VIII of the Laboratory’s RCRA Hazardous Waste Facility permit (EPA 1990, 01585; EPA 1994, 44146). DOE has administrative authority over the work performed by ENV-RS at this site.”

The contaminants found at AOC 0-027 were VOCs (including BTEX), SVOCs, TPH, RCRA metals, PCBs, and pesticides. Radioactive contamination at this site is not considered to be an issue. NMED, therefore, has administrative authority over the work being performed at this AOC.

LANL Response

1. The Laboratory acknowledges the comment and recognizes that NMED has administrative authority for this site.

NMED Comment

2. Section 2.2.1 Previous Investigations, page 3, paragraph 3:

Permittees’ Statement: *“The 1996 sample data are included in Appendix A. Elevated levels of BTEX contaminants were found in the samples.”*

It is not clear what the Permittees mean by elevated levels. As there are no background values for BTEX constituents, there are no baseline concentrations for comparison. TPH levels are two orders of magnitude higher than BTEX with regard to the 1996 sample data and are therefore considered “elevated” according to NMED TPH Screening Guidelines dated November 2005. The Permittees must revise the statement to explain quantitatively what is meant by elevated levels of BTEX and by the same definition also note elevated levels of any and all constituents for which samples were analyzed.

LANL Response

2. The last two sentences in Section 2.2.1, page 3, paragraph 3 should be deleted and the text revised to include a new paragraph summarizing the 1996 sample data.

The revised text is as follows:

The 1996 sample data are provided on the data CD in Appendix A. Inorganic chemicals detected above background values in 1996 samples included aluminum, antimony, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, lead, magnesium, nickel, selenium, silver, thallium, vanadium, and zinc. Organic chemicals detected in 1996 samples included acetone; benzene; benzoic acid; bis(2-ethylhexyl)phthalate; 2-butanone; n-butylbenzene; tert-butylbenzene; 4-chloroaniline; dichlorodiphenyldichloroethane (4,4'-DDD); dichlorophenyltrichloroethylene (4,4'-DDE); dichlorodiphenyltrichloroethane (4,4'-DDT); 2,4-dimethylphenol; ethylbenzene; fluoranthene; isophorone; isopropylbenzene; 4-isopropyltoluene; 4-methyl-2-pentanone; methylene chloride; 2-methylnaphthalene; naphthalene; 4-nitrophenol; pentachlorophenol; 1-propylbenzene; pyrene; tetrachloroethene; toluene; total petroleum hydrocarbons (TPH); 1,2,3-trichlorobenzene; 1,2,4-trichlorobenzene; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; total xylene; and 1,2-xylene.

NMED Comment

3. Section 2.2.2 Preliminary Site Conceptual Model, page 3, paragraph 1:

Permittees' Statement: "The only potential ecological receptors that are known to be present on the site are ants that have burrowed into cracks in the parking lot."

The Permittees must reference the New Mexico Ecological Exclusion Criteria Checklist to document the above statement. The checklist may be found on NMED's website at:
[http://www.nmenv.state.nm.us/lhwb/data/Attachments%20AB Part%20B%20final.doc](http://www.nmenv.state.nm.us/lhwb/data/Attachments%20AB%20Part%20B%20final.doc)

LANL Response

- The Laboratory has developed its own ecological scoping checklist that has been used and included in reports submitted to NMED for the past 8 years. The checklist for Area of Concern (AOC) 0-027 was included in the "Plan for the Voluntary Corrective Action at Potential Release Sites (PRSs) 0-030(b)-00, 0-027, 0-030(a), 0-029(a,b,c), 0-010(a,b), and 0-033(a), and the Interim Action at PRS 21-021" (LANL 2002, 73579). However, the observation noted in the comment was not included because the ants were observed after the ecological scoping checklist had been completed. An amended checklist, which includes the additional observation, is attached.

NMED Comment

4. Section 2.2.2 Preliminary Site Conceptual Model, page 3, paragraph 1:

Permittees' Statement: "Most of the site is now covered with a concrete parking lot, and there is minimal potential for surface exposure to contaminants in the paved area. For subsurface exposure to humans to be complete, the site would need to be excavated and contaminated subsurface material would need to be removed and redistributed on the surface, so that it could be available for contact."

Future land use may be subject to change and may include construction activities. Permittees must therefore include the construction worker scenario for evaluation of human health risk.

LANL Response

- The construction worker scenario was evaluated for human health risk. The comparison is presented in revised Tables 2.4-1, 2.4-2, B-1, and B-2, which are attached to this response. Based on a construction worker scenario, the HI (1.7) for noncarcinogenic COPCs is slightly above NMED's target level of 1.0 (revised Table 2.4-1). The HI for construction worker scenario is approximately half the initial HI (based on 2002 inorganic and organic chemical data) of 3.0 (revised Table B-1). The carcinogenic risk (1.8×10^{-7}) under the construction worker scenario is less than NMED's target level of 1×10^{-5} (revised Table 2.4-2). The carcinogenic risk shows a decrease of approximately an order of magnitude from the assessment based on the 2002 data (revised Table B-2) for the construction worker scenario.

NMED Comment

5. Section 2.3.4 Revised Site Conceptual Model, page 7, paragraph 1:

Permittees' Statement: "The preliminary conceptual site model for AOC 0-027 is described in Section 2.2.2, and the revised site conceptual model remains unchanged."

The land adjacent to AOC 0-027 is planned to become the Trinity Site Revitalization Project, which will include major construction activities. It remains likely that AOC 0-027 will also undergo construction activities in the near future.

Permittees must reevaluate the revised conceptual model and include the construction worker scenario for evaluation of human health risk.

LANL Response

5. AOC 0-027 is located on private property belonging to the Archdiocese of Santa Fe and is not part of the Trinity Site Revitalization Project. However, a construction worker scenario has been added to the screening assessment (see attached revised Tables 2.4-1, 2.4-2, B-1, and B-2). The conceptual site model figure (Figure 2.2-2) has also been revised to include a construction worker receptor and is attached.

NMED Comment

6. Section 2.3.4.1 Nature and Extent of Contamination, page 7, paragraph 3:

Permittees' Statement: *"TPH, both DRO and GRO, are present in the subsurface at AOC 0-027. TPH does not have an associated toxicity value. Rather, it is the constituent chemicals (VOCs or SVOCs) typically occurring in petroleum mixtures that result in associated risk."*

TPH levels have an associated toxicity value according to NMED TPH Screening Guidelines (November 2005). These guidelines can be found on the web at:

[http://www.nmenv.state.nm.us/hwb/data/NMED Total Petroleum Hydrocarbon \(TPH\) Screening Guidelines 6-24-2003.pdf](http://www.nmenv.state.nm.us/hwb/data/NMED%20Total%20Petroleum%20Hydrocarbon%20(TPH)%20Screening%20Guidelines%206-24-2003.pdf)

Data from 1996 show TPH-DRO concentrations to be as high as 17,000 mg/kg at the four-foot depth interval. According to the NMED screening guidelines referenced above, inhalation levels should not exceed 940 mg/kg for kerosene or jet fuel, and should not exceed 880 mg/kg for diesel #2 or crankcase oil. The data for 2004 show the greatest concentration of TPH to be at 20 feet bgs (28,400 mg/kg). Two other samples had concentrations of 7,900 mg/kg and 10,000 mg/kg at the 9-10 ft. depth.

The Permittees must evaluate the potential impact to human exposure under the construction worker scenario referred to in Comment 5 and incorporate the TPH Screening Guidelines in the screening assessment.

LANL Response

6. The "Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027" (LANL 2005, 91127) was submitted to NMED on April 18, 2005, before the referenced above NMED TPH screening guidelines were released in November 2005 (NMED 2005, 90804). The Laboratory reviewed the 2003 TPH screening guidelines (NMED 2003, 89372) released on June 24, 2003, at the time the report was being prepared, but did not use the values because no direct exposure to the soil, which is under asphalt, occurred.

LANL cannot evaluate the potential impact to human exposure under the construction worker scenario using TPH screening guidelines because none are available for the construction worker exposure. However, comparisons to the residential and industrial TPH screening levels are provided below.

The TPH Screening Guidelines do not provide screening values for gasoline TPH (TPH-GRO); therefore, no comparison can be made. The maximum concentration of TPH-GRO in 2004 samples from 0–12 ft below ground surface (bgs) is 10,000 mg/kg at location 00-22861, which is the approximate center of AOC 0-027. The next highest concentration of TPH-GRO from 0–12 ft bgs is 128 mg/kg at location 00-22860, a decrease of almost 3 orders of magnitude within 60 ft. Within the surrounding locations, the concentrations of TPH-GRO decrease to less than 10 mg/kg.

Based on the site history, TPH-diesel range organic (TPH-DRO) data can be compared to the petroleum product diesel #2, fuel oil, or an unknown oil. The residential and industrial direct exposure screening values are the most conservative for the unknown oil. The maximum concentration of TPH-DRO from 0–12 ft bgs (7900 mg/kg) exceeds the residential direct exposure value of 800 mg/kg and the industrial direct exposure value of 2000 mg/kg. The maximum concentration of TPH-DRO in 2004 samples from 0–12 ft bgs is at location 00-22857, which is the approximate center of AOC 0-027. The next highest concentration of TPH-DRO from 0–12 ft bgs for the 2004 data is 3530 mg/kg at location 00-22861, which also exceeds the residential and industrial direct exposure screening values and is located approximately 30 ft away from location 00-22857. The concentrations of TPH-DRO at the surrounding locations decrease by over an order of magnitude and are less than the residential and industrial direct exposure screening values. Therefore, the area with concentrations of TPH-DRO that exceed the screening values is limited and the maximum detected TPH-DRO concentration overestimates the potential exposure to receptors.

In addition to the TPH screening values comparison, the components of TPH were compared to NMED soil screening levels (SSLs) (NMED 2004, 85615), as directed by NMED's TPH screening guidelines. These comparisons are included in Tables 2.4-1 and 2.4-2 for the 2004 data and Tables B-1 and B-2 for the 2002 data. (The revised tables are provided as attachments to these responses.) The SSL comparisons for the 2004 data indicate no potential unacceptable cancer risk for any of the scenarios evaluated. However, the HIs for the noncarcinogenic chemicals of potential concern (COPCs) exceeded 1.0 for each scenario evaluated. The industrial and construction worker HIs are slightly above NMED's target level of 1.0 using the maximum detected concentrations for the exposure concentrations (revised Tables 2.4-1 and 2.4-2). Because the concentrations of COPCs decrease substantially beyond where the maximum concentrations were detected, the use of maximum detected concentrations to represent the exposure overestimates the potential risk to all the receptors.

NMED Comment

7. Section 2.4.1 Human Health Screening Assessment, page 9, paragraph 2 (Scoping):

Permittees' Statement: "Land use at AOC 0-027 currently results in a limited social exposure and is expected to remain the same for the reasonably foreseeable future."

The Permittees must clarify what is meant by "social" exposure, and revise the statement to include the possibility of anticipated future land use that may involve construction activities.

LANL Response

7. The limited "social exposure" refers to the use of the Knights of Columbus Hall for public events and meetings, typically no more than 6 hr/week, as described in the "Uncertainty Analysis" [Section 2.4.1(c), Exposure Assessment, Identification of Receptors, p. 11]. This exposure time includes approximately 4 hr/month for meetings, 4 hr/month for board of directors meetings, and

4 hr/week for social/recreational functions. Therefore, exposure under this “social” scenario is much less than the industrial exposure used to evaluate the potential risk of TPH and the individual COPCs at the AOC.

The text of Section 2.4.1 (a) is revised as follows:

(a) Scoping

Current land use at AOC 0-027 is not consistent with either a residential or an industrial scenario. The Knights of Columbus Hall is used for social gatherings and is typically occupied for no more than 6 hours per week (the equivalent of one-fifth of the industrial scenario exposure). The exterior portion of the site is open to the public, and members of the public may occasionally walk across the property.

Although a residential scenario is unlikely under current and projected future site conditions, the potential present-day risks under a residential scenario were evaluated for informational purposes only. An industrial scenario is also presented because it represents a more realistic exposure scenario than the residential scenario. However, the soil screening levels used in the screening evaluation reflect an industrial scenario that is based on an exposure of 8 hr/day and 225 day/yr. Therefore, the industrial scenario overestimates the potential exposure and risk at the site by a factor of 5. A construction worker scenario is also evaluated, although no construction activities are currently planned for the Knights of Columbus Hall and parking lot.

REFERENCES

LANL (Los Alamos National Laboratory), June 1, 2002. “Plan for the Voluntary Corrective Action at Potential Release Sites (PRSs) 0-030(b)-00, 0-027, 0-030(a), 0-029(a,b,c), 0-010(a,b), and 0-033(a), and the Interim Action at PRS 21-021,” Los Alamos National Laboratory document LA-UR-02-1081, Los Alamos, New Mexico. (LANL 2002, 73579)

LANL (Los Alamos National Laboratory), March 1, 2005. “Addendum to the Completion Report for the Voluntary Corrective Action Using a Soil Vapor Extraction System at Area of Concern 0-027,” Los Alamos National Laboratory document LA-UR-05-0583, Los Alamos, New Mexico. (LANL 2005, 91127)

NMED (New Mexico Environment Department), June 2003. “New Mexico Environment Department TPH Screening Guidelines, June 24, 2003,” New Mexico Environment Department guidelines, Santa Fe, New Mexico. (NMED 2003, 89372)

NMED (New Mexico Environment Department), February 2004. “Technical Background Document for Development of Soil Screening Levels, Revision 2,” New Mexico Environment Department guidelines, Santa Fe, New Mexico. (NMED 2004, 85615)

NMED (New Mexico Environment Department), November 2005. “New Mexico Environment Department TPH Screening Guidelines, November 2005,” New Mexico Environment Department guidelines, Santa Fe, New Mexico. (NMED 2005, 90804)

**Table 2.4-1
Screening Evaluation for Noncarcinogenic COPCs at AOC 0-027 Using 2004 Data**

Analyte	2004 Maximum Value less than 12 ft (mg/kg)	Residential NMED SSL ^a (mg/kg)	Residential HQ	Industrial NMED SSL ^b (mg/kg)	Industrial HQ	Construction Worker NMED SSL ^c (mg/kg)	Construction Worker HQ
Acetone	0.187	7.04E+04	2.66E-06	1.46E+05 ^d	1.28E-06	9.20E+06 ^e	2.03E-08
Barium	125	5.45E+03	2.29E-02	7.83E+04	1.60E-03	1.44E+03	8.68E-02
Butanone[2-]	0.0132	573	2.30E-05	2.11E+03 ^d	6.26E-06	1.88E+03	7.02E-06
n-Butylbenzene	31.7	580.9 ^f	5.46E-02	2.57E+03 ^d	1.23E-02	2.32E+03 ^e	1.37E-02
sec-Butylbenzene	10	456.9 ^f	2.19E-02	1.93E+03 ^d	5.18E-03	1.74E+03 ^e	5.75E-03
Isopropylbenzene	37.6	700	5.37E-02	2.73E+03	0.01	2.32E+03	1.62E-02
Isopropyltoluene[4-] ^g	6.9	700 ^d	9.86E-03	2.73E+03	2.53E-03	2.32E+03	2.97E-03
Lead	36.1	400	9.03E-02	750	4.81E-02	750	4.81E-02
Methylnaphthalene[2-] ^h	3.14	71.9 ^e	4.37E-02	273	0.01	246	1.28E-02
Naphthalene	4.32	71.9	6.01E-02	273 ^d	0.02	246 ^e	1.76E-02
Propylbenzene[1-]	48.1	580.9 ^f	8.28E-02	2.57E+03 ^d	1.87E-02	2.32E+03 ^e	2.08E-02
Toluene	189	795.4 ^f	0.24	3.04E+03 ^d	0.06	2.73E+03 ^e	6.92E-02
Trimethylbenzene[1,2,4-]	95.4	52.2	1.83	191	0.5	171	0.56
Trimethylbenzene[1,3,5-]	40.3	22.3	1.81	81.4 ^d	0.5	73.2 ^e	0.55
Xylene[1,2-]	110	260.9 ^f	0.42	967 ^d	0.11	870 ^e	0.13
Xylenes (total)	207	296.8 ^f	0.7	1.10E+03 ^d	0.19	992 ^e	0.21
			HI = 5.44		HI = 1.49		HI = 1.74

^a Value from NMED – Residential (NMED 2004, 85615).

^b Value from NMED – Industrial (NMED 2004, 85615).

^c Value from NMED – Construction Worker (NMED 2004, 85615).

^d Value calculated using Equation 7 (NMED 2004, 85615).

^e Value calculated using Equation 9 (NMED 2004, 85615).

^f Value calculated using Equation 1 (NMED 2004, 85615).

^g Isopropylbenzene used as a surrogate for isopropyltoluene.

^h Naphthalene used as a surrogate for 2-methylnaphthalene.

**Table 2.4-2
Screening Evaluation for Carcinogenic COPCs at AOC 0-027 Using 2004 Data**

Carcinogen	2004 Maximum Value less than 12 ft (mg/kg)	Residential NMED SSL^a (mg/kg)	Residential Cancer Risk	Industrial NMED SSL^b (mg/kg)	Industrial Cancer Risk	Construction Worker NMED SSL^c (mg/kg)	Construction Worker Cancer Risk
Benzene	2.76	27	1.02E-06	73.6	3.75E-07	157	1.76E-07
Ethylbenzene	183	1.06E+04	1.73E-07	2.54E+04	7.20E-08	5.71E+05	3.20E-09
Methylene Chloride	0.0113	165	6.85E-10	440	2.57E-10	2.55E+03	4.43E-11
		Total ICR^d = 1.20E-06		Total ICR = 4.47E-07		Total ICR = 1.79E-07	

^a Value from NMED – Residential (NMED 2004, 85615).

^b Value from NMED – Industrial (NMED 2004, 85615).

^c Value from NMED – Construction Worker (NMED 2004, 85615).

^d ICR = Incremental Cancer Risk.

Table B-1
Screening Evaluation for Noncarcinogenic COPCs at AOC 0-027 Using 2002 Data

Analyte	2002 Maximum Value less than 12 ft (mg/kg)	Residential NMED SSL ^a (mg/kg)	Residential HQ	Industrial NMED SSL ^b (mg/kg)	Industrial HQ	Construction Worker NMED SSL ^c (mg/kg)	Construction Worker HQ
Acetone	0.16	7.04E+04	2.27E-06	1.46E+05 ^d	1.10E-06	9.20E+06 ^e	1.74E-08
Barium	125	5.45E+03	0.02	7.83E+04	1.60E-03	1.44E+03	8.68E-02
Butanone[2-]	0.043	573	7.50E-05	2110 ^d	2.04E-05	1.88E+03	2.29E-05
n-Butylbenzene	66	580.9 ^f	0.11	2570 ^d	2.57E-02	2.32E+03 ^e	2.85E-02
sec-Butylbenzene	37	456.9 ^f	0.08	1930 ^d	1.92E-02	1.74E+03 ^e	2.13E-02
Dibenzofuran	0.28	313	8.95E-04	3.17E+03	8.83E-05	1.09E+03	2.57E-04
Isopropylbenzene	72	700	0.1	2730	2.64E-02	2.32E+03	3.10E-02
Isopropyltoluene[4-] ^g	25	700	0.04	2730	9.16E-03	2.32E+03	1.08E-02
Lead	36.1	400	0.09	750	4.81E-02	750	4.81E-02
Methylnaphthalene[2-] ^h	6.7	71.9	0.09	273.0	2.45E-02	246	2.72E-02
Naphthalene	7.2	71.9	0.1	273 ^d	2.64E-02	246 ^e	2.93E-02
Phenanthrene	0.13	1.80E+03	7.22E-05	2.05E+04	6.34E-06	6.99E+03	1.86E-05
Propylbenzene[1-]	100	580.9 ^f	0.17	2570 ^d	3.89E-02	2.32E+03 ^e	4.32E-02
Toluene	72	795.4 ^f	0.09	3040 ^d	2.37E-02	2.73E+03 ^e	2.63E-02
Trimethylbenzene[1,2,4-]	210	52.2	4.02	191	1.10E+00	171	1.23E+00
Trimethylbenzene[1,3,5-]	61	22.3	2.74	81.4 ^d	7.49E-01	73.2 ^e	8.33E-01
Xylene[1,2-]	NA ⁱ	n/a ⁱ	n/a	n/a	n/a	n/a	n/a
Xylene (total)	570	296.8 ^f	1.92	1100 ^d	5.18E-01	992 ^e	5.75E-01
			HI = 9.58		HI = 2.61		HI = 2.99

^a Value from NMED – Residential (NMED 2004, 85615).

^b Value from NMED – Industrial (NMED 2004, 85615).

^c Value from NMED – Construction Worker (NMED 2004, 85615).

^d Value calculated using Equation 7 (NMED 2004, 85615).

^e Value calculated using Equation 9 (NMED 2004, 85615).

^f Value calculated using Equation 1 (NMED 2004, 85615).

^g Isopropylbenzene used as a surrogate for isopropyltoluene.

^h Naphthalene used as a surrogate for 2-methylnaphthalene.

ⁱ NA = Not analyzed.

^j n/a = Not applicable.

Table B-2
Screening Evaluation for Carcinogenic COPCs at AOC 0-027 Using 2002 Data

Carcinogen	2002 Maximum Value less than 12 ft (mg/kg)	Residential NMED SSL^a (mg/kg)	Residential Cancer Risk	Industrial NMED SSL^b (mg/kg)	Industrial Cancer Risk	Construction Worker NMED SSL^c (mg/kg)	Construction Worker Cancer Risk
Benzene	28	27	1.04E-05	73.6	3.80E-06	157	1.78E-06
Ethylbenzene	380	1.06E+04	3.58E-07	2.54E+04	1.50E-07	5.71E+05	6.65E-09
Methylene Chloride	ND ^d	n/a ^e	n/a	n/a	n/a	n/a	n/a
		Total ICR^f = 1.07E-05		Total ICR = 3.95E-06		Total ICR = 1.79E-06	

^a Value from NMED – Residential (NMED 2004, 85615).

^b Value from NMED – Industrial (NMED 2004, 85615).

^c Value from NMED – Construction Worker (NMED 2004, 85615).

^d ND = Not detected.

^e n/a = Not applicable.

^f ICR = Incremental Cancer Risk.

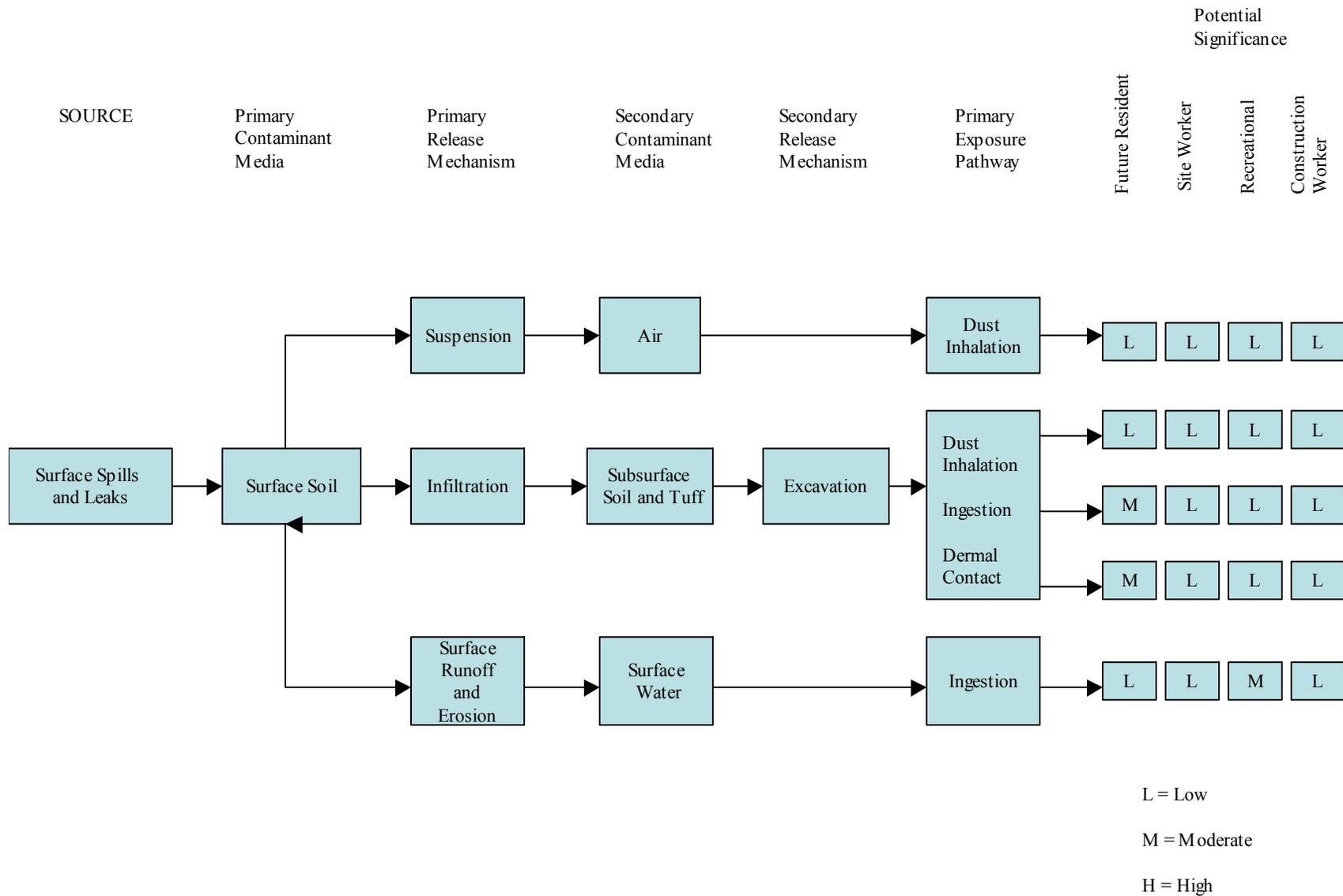


Figure 2.2-2. Revised conceptual model for AOC 0-027

ECOLOGICAL SCOPING CHECKLIST

Part A—Scoping Meeting Documentation

Site ID	
<p>Form of site releases (solid, liquid, vapor). Describe all relevant known or suspected <u>mechanisms</u> of release (spills, dumping, material disposal, outfall, explosive testing, etc.) and describe potential <u>areas</u> of release. Reference locations on a map as appropriate.</p>	<p>AOC 0-027 was used as a fuel tank farm beginning in 1946 and converted to a drum storage area in mid-1948. A septic system [SWMU 0-030(a)], consisting of a septic tank and associated piping, served a former fuel dispatch office associated with AOC 0-027. The SWMU 0-030(a) septic system was crushed and left in place during a previous VCA.</p>
<p>List of Primary Impacted Media (Indicate all that apply.)</p>	<p>Surface soil – leaks from drums potentially impacted surface soils than have been covered with fill Surface water/sediment – NA Subsurface – leaks from USTs potentially impacted subsurface Groundwater – NA Other, explain –NA</p>
<p>FIMAD vegetation class based on Arcview vegetation coverage (Indicate all that apply.)</p>	<p>Water – NA Bare Ground/Unvegetated – NA Spruce/fir/aspens/mixed conifer – NA Ponderosa pine – NA Piñon juniper/juniper savannah – NA Grassland/shrubland – NA Developed –.Yes</p>
<p>Is T&E Habitat Present? If applicable, list species known or suspected to use the site for breeding or foraging.</p>	<p>AOC 0-027 and SWMU 0-030(a) are entirely within an area in which the Mexican spotted owl can be conservatively assumed to forage at a relatively moderate frequency and in which the bald eagle is conservatively assumed to forage at a relatively low frequency.</p>
<p>Provide list of Neighboring/ Contiguous/ Up-gradient sites, include a brief summary of COPCs and form of releases for relevant sites and reference map as appropriate. (Use information to evaluate need to aggregate sites for screening.)</p>	<p>Site is located at the intersection of Trinity Drive (north) and DP Road (west and south). DP Tank Farm lies downgradient, and to the immediate east. The site is the current location of the Knights of Columbus Hall. A gas station operated by DOE was formerly located upgradient at what is now the Best Western Hilltop House to the north.</p> <p>Contamination is attributable to petroleum products leaking from storage facilities. Suspected contaminants are primarily fuel products (e.g., BTEX and other VOCs, SVOCs, TPH, TAL metals, and PCBs)</p>
<p>Surface Water Erosion Potential Information Summarize information from SOP 2.01, including the run-off subscore (maximum of 46); terminal point of surface water transport; slope; and surface water runoff sources.</p>	<p>AOC 0-027 has an erosion matrix score of 17.5 out of 100 [Appendix C of the Plan (LANL 2002, 73579)]. The factors (i.e., the runoff subscore) affecting surface-water runoff combined account for 6.9 of 46 points. While the soils are covered by concrete, there is a non-zero runoff subscore because runoff collects in a depression in the parking lot and terminates into DP Canyon and SWMU 0-030(a) by sheet-flow processes (i.e., AOC 0-027 parking-lot runoff affects other SWMUs). SWMU 0-030(a) has an erosion matrix score of 8.8 with BMPs in place. The subsurface-water runoff subscore for SWMU 0-030(a) is 0.</p>

Part B—Site Visit Documentation

Site ID	Former DP Road Storage Area, AOC 0-027 and 0-030(a)
Date of Site Visit	21 September 2001
Site Visit Conducted by	Jim Markwiese, Tracy McFarland, Ralph Perona, John Tauxe, Randall Ryti

Receptor Information:

Estimate cover	Relative vegetative cover (high, medium, low, none) = None Relative wetland cover (high, medium, low, none) = NA Relative structures/asphalt, etc. cover (high, medium, low, none) = High
Field notes on the FIMAD vegetation class to assist in ground-truthing the Arcview information	SWMU 0-030(a) currently consists of a gravel parking lot with large areas of bare ground and a few patches of weeds/grass. AOC 0-027 is almost entirely covered by the Knights of Columbus Hall and the associated concrete parking lot.
Field notes on T&E Habitat, if applicable. Consider the need for a site visit by a T&E subject matter expert to support the use of the site by T&E receptors.	While T&E habitat overlaps with the SWMU and AOC, these sites offer marginal habitat. Owls are known to forage on parking lots. However, prey (e.g., rodents) captured there are assumed to originate from off-site areas because of the lack of fossorial habitat (i.e., soils are covered by concrete).
Are ecological receptors present at the site? (yes/no/uncertain) Describe the general types of receptors present at the site (terrestrial and aquatic), and make notes on the quality of habitat present at the site.	No. The site is almost entirely covered by a parking lot. A few gopher holes were observed on the periphery of the lot, in the vicinity of the previously remediated SWMU 0-030(a). This area is outside the boundary in which VOC contamination has been recorded for AOC 0-027. Additionally ant colonies were observed to have small nests in the concrete cracks. Consequently, ecological receptors are not expected to come in contact with impacted surface or subsurface soils onsite.

Contaminant Transport Information:

Surface water transport Field notes on the erosion potential, including a discussion of the terminal point of surface water transport (if applicable).	Runoff and infiltration from rain events and snowmelt are the only aspects of surface water hydrology at AOC 0-027 and SWMU 0-030(a). Flow sheets off the parking lots into roadways or into DP Tank Farm to the east. The concrete cover prevents surface erosion or infiltration.
Are there any off-site transport pathways (surface water, air, or groundwater)? (yes/no/uncertain) Provide explanation	No. Subsurface contamination appears to have stabilized with regard to mobility, and no drivers exist to push a plume closer to groundwater. The parking lot cover prevents surface transport.
Interim action needed to limit off-site transport? (yes/no/uncertain) Provide explanation/ recommendation to project lead for IA SMDP.	NA

Ecological Effects Information:

Physical Disturbance (Provide list of major types of disturbances, including erosion and construction activities, review historical aerial photos where appropriate.)	Site is entirely developed.
Are there obvious ecological effects? (yes/no/uncertain) Provide explanation and apparent cause (e.g., contamination, physical disturbance, other).	NA
Interim action needed to limit apparent ecological effects? (yes/no/uncertain) Provide explanation and recommendations to mitigate apparent exposure pathways to project lead for IA SMDP.	NA

No Exposure/Transport Pathways:

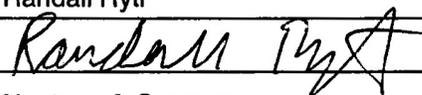
<p>If there are no complete exposure pathways to ecological receptors onsite and no transport pathways to offsite receptors, the remainder of the checklist should not be completed. Stop here and provide additional explanation/justification for proposing an ecological No Further Action recommendation (if needed). At a minimum, the potential for future transport should include likelihood that future construction activities could make contamination more available for exposure or transport.</p> <p>The current Knights of Columbus building and parking lot have been in place for three decades. No complete exposure pathways to ecological receptors exist, and no offsite transport pathways exist. Future construction activities are not anticipated. However, if the site were to be redeveloped, the basic layout (i.e., commercial buildings and paved parking lot) would likely remain unchanged</p>

Signatures and certifications:

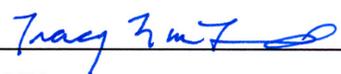
Checklist completed by (provide name, organization and phone number):

Name (printed): James Markwiese
Name (signature): 
Organization: Neptune & Company
Phone number: 505-662-0707 (ext. 24)
Date completed: 28 September 01

Verification by a member of the ER Project Ecological Risk Task Team (provide name, organization and phone number):

Name (printed): Randall Ryti
Name (signature): 
Organization: Neptune & Company
Phone number: 505-662-0707 (ext. 12)

Amended

Name (printed): Tracy L. McFarland
Name (signature): 
Organization: LATA
Phone number: 505-662-1830
Date Completed: 01 August 2006