

IDAPA 58 – DEPARTMENT OF ENVIRONMENTAL QUALITY

58.01.24 – STANDARDS AND PROCEDURES FOR APPLICATION OF RISK BASED CORRECTIVE ACTION AT PETROLEUM RELEASE SITES

DOCKET NO. 58-0124-1801

NOTICE OF RULEMAKING – ADOPTION OF TEMPORARY AND PENDING RULE

EFFECTIVE DATE: This rule has been adopted by the Idaho Board of Environmental Quality (Board) as a temporary and pending rule. The temporary rule will become effective on December 5, 2018. The pending rule will become final and effective immediately upon the adjournment sine die of the First Regular Session of the Sixty-fifth Idaho Legislature unless prior to that date the rule is rejected in whole or in part by concurrent resolution in accordance with Sections 67-5224 and 67-5291, Idaho Code.

AUTHORITY: In compliance with Sections 67-5224 and 67-5226, Idaho Code, notice is hereby given that the Board has adopted a temporary and pending rule. This action is authorized by Chapters 1, 36, 44, 72 and 74, Title 39, Idaho Code.

DESCRIPTIVE SUMMARY: A detailed summary of the reason for adopting the rule is set forth in the initial proposal published in the Idaho Administrative Bulletin, September 5, 2018, [Vol. 18-9, pages 457 through 466](#). DEQ received no public comments; however, Section 300 has been revised for clarification purposes. The remainder of the rule has been adopted as initially proposed. The Rulemaking and Public Comment Summary can be obtained at www.deq.idaho.gov/58-0124-1801 or by contacting the undersigned.

TEMPORARY RULE JUSTIFICATION: Pursuant to Section 67-5226(1)(c), Idaho Code, the Governor has found that temporary adoption is appropriate in that the rulemaking confers a benefit. The revisions to the rule and associated guidance will confer a benefit to the regulated community by providing the most current toxicity criteria in both the rule and guidance. Adoption of a temporary rule would ensure that the effective date of the rule lines up with the date the revised guidance manual becomes final.

IDAHO CODE SECTION 39-107D STATEMENT: Section 39-107D, Idaho Code, provides that DEQ must meet certain requirements when it formulates and recommends rules which are broader in scope or more stringent than federal law or regulations. There is no federal law or regulation that is comparable to the Standards and Procedures for Application of Risk Based Corrective Action at Petroleum Release Sites. Therefore, this rule is not broader in scope or more stringent than federal law or regulations.

Section 39-107D, Idaho Code, also applies to a rule which “proposes to regulate an activity not regulated by the federal government.” This rule does not propose to regulate an activity not regulated by the federal government. However, the proposed rule does make revisions to a process currently in the rule that is not specifically delineated or required by the federal government. DEQ previously addressed Sections 39-107D(3) and (4), Idaho Code, when this rule chapter was first promulgated in 2009 under Docket No. 58-0124-0801.

ASSISTANCE ON TECHNICAL QUESTIONS: For assistance on questions concerning this rulemaking, contact Eric Traynor at eric.traynor@deq.idaho.gov, (208) 373-0565.

Dated this 5th day of December, 2018.

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DOCKET NO. 58-0124-1801 - ADOPTION OF PENDING AND TEMPORARY RULE

Substantive changes have been made to the pending rule.
Italicized red text that is double underscored is new text that has been added to the pending rule.

The complete text of the proposed rule was published in the Idaho Administrative Bulletin,
Volume 18-9, September 5, 2018, pages 457 through 466.

This rule has been adopted as a pending rule by the Agency and is now awaiting
review and final approval by the 2019 Idaho State Legislature.

Additionally, this rule has been adopted as a temporary rule and is effective December 5, 2018.

Pursuant to Section 67-5226, Idaho Code, the full text of
the temporary rule is being published in this Bulletin.

008. **LIST OF TABLES.**

The following tables are found in Section 800.

(5-8-09)

01. **Table 1. Chemicals of Interest for Various Petroleum Products.** The table of chemicals of interest for various petroleum products is available in Section 800 of these rules.

(5-8-09)(12-5-18)T

02. **Table 2. Residential Use Screening Levels Screening Level Concentrations for Soil, Ground Water, and Soil Vapor.** The table of screening level concentrations for soil, ground water, and soil vapor is available in the Idaho Risk Evaluation Manual for Petroleum Releases at www.deq.idaho.gov.

(5-8-09)(12-5-18)T

03. **Table 3. Default Toxicity Values for Risk Evaluation.** The table of default toxicity values for risk evaluation is available in the Idaho Risk Evaluation Manual for Petroleum Releases at www.deq.idaho.gov.

(5-8-09)(12-5-18)T

(BREAK IN CONTINUITY OF SECTIONS)

100. **CHEMICALS EVALUATED AT PETROLEUM RELEASE SITES.**

01. **General Applicability.** For petroleum sites governed by Sections 851 and 852 of IDAPA 58.01.02, "Water Quality Standards," the chemicals listed in Subsection 800.01 (Table 1) Section 800, table of chemicals of interest for various petroleum products, will be evaluated based on the specific petroleum product or products known or suspected to have been released.

(5-8-09)(12-5-18)T

02. **Additional Chemicals.** Evaluation of non-petroleum chemicals in addition to those in Subsection 800.01 (Table 1) Section 800, table of chemicals of interest for various petroleum products, may be required by the Department when there is a reasonable basis based on site-specific information. A reasonable basis shall be demonstrated by the Department when it can show documentation of releases or suspected releases of other non-petroleum chemicals.

(5-8-09)(12-5-18)T

101. -- 199. **(RESERVED)**

200. RISK EVALUATION PROCESS.

The following risk evaluation process shall be used for petroleum releases in accordance with the Petroleum Release Response and Corrective Action Rules described in IDAPA 58.01.02, "Water Quality Standards," Section 852. (5-8-09)

01. Screening Evaluation. The screening evaluation may be performed at any time during the release response and corrective action process described in IDAPA 58.01.02, "Water Quality Standards," Section 852. The screening evaluation shall include, at a minimum: (5-8-09)

a. Collection of media-specific (soil, surface water, ground water) data; and (5-8-09)

b. Identification of maximum soil, ground water, and soil vapor petroleum chemical concentrations for the chemicals identified in ~~Subsection 800.01 (Table 1)~~ Section 800, table of chemicals of interest for various petroleum products, as appropriate for the petroleum product or products released. ~~(3-29-12)~~(12-5-18)T

c. Comparison of the maximum media-specific petroleum contaminant concentrations to the screening levels identified in ~~Subsection 800.02 (Table 2)~~ the table of screening level concentrations for soil, ground water, and soil vapor in the Idaho Risk Evaluation Manual for Petroleum Releases. If the maximum media-specific petroleum contaminant concentrations at a site do not exceed the screening levels, the owner and/or operator may petition for site closure, subject to other Department regulatory obligations. If the maximum media-specific concentrations at a site exceed the screening levels, the owner and/or operator shall proceed to: ~~(5-8-09)~~(12-5-18)T

i. Adopt the screening levels as cleanup levels and develop a corrective action plan to achieve those levels pursuant to Subsection 200.03; or (5-8-09)

ii. Perform a site specific risk evaluation pursuant to Section 300. The Department may require the collection of additional site-specific data prior to the approval of the risk evaluation. (5-8-09)

02. Results of Risk Evaluation. If the results of the approved risk evaluation do not exceed the acceptable target risk level, acceptable target hazard quotient, or acceptable target hazard index specified in Section 300, the owner and/or operator may petition for site closure, subject to other Department regulatory obligations. If the results of the approved risk evaluation indicates exceedance of the acceptable target risk level, acceptable target hazard quotient, or acceptable target hazard index specified in Section 300, the risk evaluation shall: (5-8-09)

a. Be modified by collection of additional site-specific data, or review of chemical toxicological information, and resubmitted to the Department for review and approval; or (5-8-09)

b. Provide the basis for the development of risk based concentrations, establishment of remediation standards as described in Section 400, and development of a corrective action plan. (5-8-09)

03. Development and Implementation of Corrective Action Plan. A Corrective Action plan required as a result of the risk evaluation process described in Section 200 shall include, but not be limited to, the following information, as applicable: (5-8-09)

a. Description of remediation standards, points of exposure, and points of compliance where remediation standards shall be achieved; (5-8-09)

b. Description of remedial strategy and actions that will be taken to achieve the remediation standards; (5-8-09)

c. Current and reasonably anticipated future land use and use of on-site and immediately adjacent off-site ground water, and surface water; (5-8-09)

d. Activity and use limitations, if any, that will be required as part of the remedial strategy; (5-8-09)

e. Proposed environmental covenants, developed to implement activity and use limitations, in

- accordance with Section 600; (5-8-09)
- f. Estimated timeline for completion; and (5-8-09)
 - g. Monitoring Plan to monitor effectiveness of remedial actions. (5-8-09)
 - h. Description of practical quantitation limits as they apply. (5-8-09)
 - i. Description of background concentrations as they apply. (5-8-09)

04. Department Review and Approval of Risk Evaluation or Corrective Action Plan. Within thirty (30) days of receipt of the risk evaluation or corrective action plan, the Department shall provide in writing either approval, approval with modifications, or rejection of the risk evaluation or corrective action plan. If the Department rejects the risk evaluation or corrective action plan, it shall notify the owner and/or operator in writing specifying the reasons for the rejection. If the Department needs additional time to review the documents, it will provide written notice to the owner and/or operator that additional time to review is necessary and will include an estimated time for review. Extension for review time shall not exceed one hundred eighty (180) days without a reasonable basis and written notice to the owner and/or operator. (5-8-09)

(BREAK IN CONTINUITY OF SECTIONS)

300. SITE SPECIFIC RISK EVALUATION REQUIREMENTS.

01. General Requirements. The general requirements for human health risk evaluations shall include, at a minimum: (5-8-09)

a. A conceptual site model which describes contaminant sources; release mechanisms; the magnitude, spatial extent, and temporal trends of petroleum contamination in all affected media; transport routes; current and reasonably likely future land use and human receptors; and relevant exposure scenarios. (5-8-09)

b. Toxicity Information derived from ~~Subsection 800.03 (Table 3)~~ appropriate sources including, but not limited to, those listed in Subsection 300.01.e. ~~(5-8-09)~~ (12-5-18)T

c. Data quality objectives and sampling approaches based on the conceptual site model that support the risk evaluation and risk management process. (5-8-09)

d. Estimated exposure point concentrations for a reasonable maximum exposure based on a conservative estimate of the mean of concentrations of chemicals that would be contacted by an exposed receptor. (5-8-09)

e. Exposure analysis including identification of contaminants of concern, potentially exposed populations, pathways and routes of exposure, exposure point concentrations and their derivation, and a quantitative estimate of reasonable maximum exposure for both current and reasonably likely future land and water use scenarios. Appropriate reference sources of reasonable maximum exposure factor information may include, but are not limited to: (5-8-09)

- i. U.S. EPA RAGS, Volume 1; (5-8-09)
- ii. U.S. EPA Exposure Factors Handbook; (5-8-09)
- iii. Idaho Risk Evaluation Manual for Petroleum Releases; and (3-29-12)
- iv. Other referenced technical publications. (5-8-09)
- f. Risk characterization presenting the quantitative human health risks and a qualitative and

quantitative assessment of uncertainty for each portion of the risk evaluation. (5-8-09)

g. Risk evaluations may include the use of transport and fate models, subject to Department approval of the model and the data to be used for the parameters specified in the model. (5-8-09)

02. Specific Requirements. Human health risk evaluations shall, at a minimum: (5-8-09)

a. Utilize an acceptable target risk level as defined in Section 010; (5-8-09)

b. Utilize an acceptable target hazard index as defined in Section 010; (5-8-09)

c. Utilize an acceptable target hazard quotient as defined in Section 010; (5-8-09)

d. Evaluate the potential for exposure from: (5-8-09)

i. Ground water ingestion; (5-8-09)

ii. Direct contact with contaminated soils resulting from soil ingestion, dermal contact, and inhalation of particulates and vapors; (5-8-09)

iii. Indoor inhalation of volatile chemicals via volatilization of chemicals from soil, ground water, or free phase product; (5-8-09)

iv. Ingestion, inhalation, or dermal exposure to ground water and/or surface water which has been impacted by contaminants that have leached from the soils; and (5-8-09)

v. Other complete or potentially complete routes of exposure; (5-8-09)

e. Evaluate the potential for exposure to: (5-8-09)

i. Adult and child residential receptors; (5-8-09)

ii. Adult construction and utility workers; (5-8-09)

iii. Aquatic life; (5-8-09)

iv. Recreational receptors; and (5-8-09)

v. Other relevant potentially exposed receptors; (5-8-09)

f. Evaluate the potential for use of impacted ground water for ingestion based on: (5-8-09)

i. The current and historical use of the ground water for drinking water or irrigation; (5-8-09)

ii. The location and approved use of existing ground water wells in a one half (½) mile radius from the contaminated site at the release point; (5-8-09)

iii. The degree of hydraulic connectivity between the impacted ground water and other ground water bearing zones or surface water; and (5-8-09)

iv. The location of delineated source water protection areas for public drinking water systems. (5-8-09)

301. -- 399. (RESERVED)

400. ESTABLISHMENT OF REMEDIATION STANDARDS.

If, as a result of the assessment and risk evaluation completed as described in Section 300, it is determined that

corrective action is required, remediation standards shall be established. The remediation standards established in these rules shall be no more stringent than applicable or relevant and appropriate federal and state standards and are consistent with Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Section 9621) and Section 39-107D(2), Idaho Code, taking into consideration site specific conditions. These standards, and any activity use limitations proposed for the site, shall be established as part of a corrective action plan approved in writing by the Department. The standards may consist of the following. (5-8-09)

01. Screening Levels. The petroleum contaminant concentrations in soil, ground water, and soil vapor in ~~Subsection 800.02 (Table 2)~~ the table of screening level concentrations for soil, ground water, and soil vapor in the Idaho Risk Evaluation Manual for Petroleum Releases. ~~(3-29-12)~~(12-5-18)T

02. Risk Based Levels. Site-specific, media-specific petroleum contaminant concentrations established in accordance with the risk evaluation procedures and requirements described in Section 300. (5-8-09)

03. Generic Health Standards. An established state or federal generic numerical health standard which achieves an appropriate health-based level so that any substantial present or probable future risk to human health or the environment is eliminated or reduced to protective levels based upon present and reasonably anticipated future uses of the site. (5-8-09)

04. Other. Remediation standards may be a combination of standards found in Subsections 400.01 through 400.03. (5-8-09)

(BREAK IN CONTINUITY OF SECTIONS)

800. TABLES.

~~01.~~ Table 1. Chemicals of Interest for Various Petroleum Products.

CHEMICALS OF INTEREST FOR VARIOUS PETROLEUM PRODUCTS				
Chemical	Gasoline/ JP-4/ AVGas	Diesel/ Fuel Oil No. 2/ Kerosene	Fuel Oil No.4	Jet Fuels (Jet A, JP-5, JP-8)
Benzene	X	X		X
Toluene	X	X		X
Ethyl benzene	X	X		X
Xylenes (mixed)	X	X		X
Ethylene Dibromide (EDB)	X ¹			
1,2 Dichloroethane (EDC)	X ¹			
Methyl Tert-Butyl Ether (MTBE)	X			
Acenaphthene		X	X	X
Anthracene		X	X	X
Benzo(a)pyrene		X	X	X
Benzo(b)fluoranthene		X	X	X
Benzo(k)fluoranthene		X	X	X
Benz(a)anthracene		X	X	X

CHEMICALS OF INTEREST FOR VARIOUS PETROLEUM PRODUCTS				
Chemical	Gasoline/ JP-4/ AVGas	Diesel/ Fuel Oil No. 2/ Kerosene	Fuel Oil No.4	Jet Fuels (Jet A, JP-5, JP-8)
Chrysene		X	X	X
Fluorene		X	X	X
Fluoranthene		X	X	X
Naphthalene	X	X	X	X
Pyrene		X	X	X
X ¹ Leaded Regular Only				

(5-8-09)(12-5-18)T

02. ~~Table 2. Residential Use Screening Levels.~~

RESIDENTIAL USE SCREENING LEVELS						
CHEMICALS	SOIL		GROUNDWATER			SOIL VAPOR ^e
	Screening Level [mg/kg]	Critical Pathway	Screening Level [mg/L]	Critical Pathway	Basis for Ingestion Screening Level	Screening Level [ug/m ³]
Benzene	0.025	GWP _a	0.005	Ingestion	MCL _b	31
Toluene	6.6	GWP	1.0	Ingestion	MCL	520,000
Ethylbenzene	0.25	Vapor Intrusion	0.05	Vapor Intrusion	N/A	97
Total Xylenes	27	Vapor Intrusion	8.7	Vapor Intrusion	N/A	10,000
Naphthalene	0.12	Vapor Intrusion	0.07	Vapor Intrusion	N/A	7.2
MTBE _c	0.08	GWP	0.04	Ingestion	Risk-Based	940
Ethylene dibromide (EDB)	0.0004	GWP	0.00005	Ingestion	MCL	0.4
1,2-Dichloroethane	0.013	GWP	0.005	Ingestion	MCL	9.4
Acenaphthene	200	GWP	2.2	Ingestion	Risk-Based	N/A
Anthracene	3200	GWP	11	Ingestion	Risk-Based	N/A
Benz(a)anthracene	0.09	GWP	0.00003	Ingestion	Risk-Based	N/A
Benzo(a)pyrene	0.02	Direct Contact	0.0002	Ingestion	MCL	N/A

RESIDENTIAL USE SCREENING LEVELS						
CHEMICALS	SOIL		GROUNDWATER			SOIL VAPOR^e
	Screening Level [mg/kg]	Critical Pathway	Screening Level [mg/L]	Critical Pathway	Basis for Ingestion Screening Level	Screening Level [ug/m³]
Benzo(b)fluoranthene	0.2	Direct Contact	0.00003	Ingestion	Risk-Based	N/A
Benzo(k)fluoranthene	1.9	Direct Contact	0.0003	Ingestion	Risk-Based	N/A
Chrysene	9.5	GWP	0.003	Ingestion	Risk-Based	N/A
Fluoranthene	1,400	GWP	1.5	Ingestion	Risk-Based	N/A
Fluorene	240	GWP	1.5	Ingestion	Risk-Based	N/A
Pyrene	1,000	GWP	1.1	Ingestion	Risk-Based	N/A
a. Ground Water Protection Via Petroleum Contaminants in Soil Leaching to Ground Water						
b. Maximum contaminant level						
c. Methyl-tert-butyl ether						
d. For the ingestion pathway, the source of the target level is indicated (MGL or a risk-based calculation).						
e. Soil vapor measurements obtained at greater than 3-5 feet below ground surface.						

(3-29-12)

03. **Table 3.** Default Toxicity Values for Risk Evaluation.

DEFAULT TOXICITY VALUES FOR RISK EVALUATION							
CHEMICALS	CAS Number^a	Oral Slope Factor (Sf_o) (kg-day/mg)	Inhalation Unit Risk (IUR) (ug/m³)	Oral Reference Dose (RfD_o) (mg/kg-day)	Inhalation Reference Concentration (RfC) (mg/m³)	Oral RA Factor (RA_o)	Dermal RA Factor (RA_d)
Benzene	71-43-2	0.055	7.8E-06	0.004	0.03	1	0
Toluene	108-88-3	NA	NA	0.08	5.0	1	0
Ethylbenzene	100-41-4	0.011	2.5E-06	0.1	1.0	1	0
Total Xylenes	1330-20-7	NA	NA	0.2	0.1	1	0
Naphthalene	91-20-3	NA	3.4E-05	0.02	0.003	1	0.13
MTBE ^c	1634-04-4	0.0018	2.6E-07	NA	3.0	1	0

DEFAULT TOXICITY VALUES FOR RISK EVALUATION							
CHEMICALS	CAS-Numbers	Oral Slope-Factor (Sf_o) (kg-day/mg)	Inhalation-Unit Risk (IUR) (ug/m³)	Oral Reference Dose (RfD_o) (mg/kg-day)	Inhalation Reference Concentration (RfC) (mg/m³)	Oral-RA_b-Factor (RAFe)	Dermal-RA-Factor (RAFd)
1,2-Dichloroethane	107-06-2	0.091	2.6E-05	0.006	0.007	1	0
Ethylene-Dibromide	106-93-4	2	6.0E-04	0.009	0.009	1	0
Acenaphthene	83-32-9	NA	NA	0.06	NA	1	0.13
Anthracene	120-12-7	NA	NA	0.3	NA	1	0.13
Benz(a)anthracene	56-55-3	0.73	1.1E-04	NA	NA	1	0.13
Benzo(a)pyrene	50-32-8	7.3	1.1E-03	NA	NA	1	0.13
Benzo(b)fluoranthene	205-99-2	0.73	1.1E-04	NA	NA	1	0.13
Benzo(k)fluoranthene	207-08-9	0.073	1.1E-04	NA	NA	1	0.13
Chrysene	218-01-9	0.0073	1.1E-05	NA	NA	1	0.13
Fluoranthene	206-44-0	NA	NA	0.04	NA	1	0.13
Fluorene	86-73-7	NA	NA	0.04	NA	1	0.13
Pyrene	129-00-0	NA	NA	0.03	NA	1	0.13
Notes:							
a -Chemical Abstract Service							
b -Relative Absorption							
c -Methyl tert-butyl ether							
NA -No data available							
Source of toxicity values is the Regional Screening Level Summary Table (May 2011) found at the U.S. EPA Regional Screening Table website. The website is located at http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm .							

(3-29-12)