

# AGENDA

## South Dakota State Emergency Response Commission

Tuesday July 15, 2014  
1:00 p.m. Central (12:00 pm Mountain)

1. Introductions
2. Call to Order and Roll Call
3. Approval of March 24, 2014, SERC Meeting Minutes
4. Federal Update – US EPA
5. Federal Update – FEMA
6. Election of Officers
7. TRI Reporting/Tier II Reporting Status – DENR
8. Crude Oil shipments – DENR
9. HMEP Grants, Training, and Planning Report – OEM
10. Regional Haz Mat Team Update – HLS/OEM
11. Other Business
12. Adjourn

---

### Held via the Digital Dakota Network at the Following Locations:

**Pierre**  
State Capitol Building  
Basement– Studio A – Room B12  
500 East Capitol  
Pierre, South Dakota

**Mitchell**  
Mitchell Technical Institute  
Room TC 155  
1800 E Spruce St  
Mitchell, South Dakota

**Rapid City**  
School of Mines & Technology  
Classroom Building – Room 110  
501 East St. Joseph Street  
Rapid City, South Dakota

**Brookings**  
Department of Transportation  
2131 34th Avenue  
Brookings, South Dakota

Notice is given to individuals with disabilities that this meeting is being held in a physically accessible location. Please notify the Department of Environment and Natural Resources at least 48 hours before the meeting if you have a disability for which special arrangements must be made at the meeting. The telephone number for making arrangements is (605) 773-3296.

Minutes of the  
South Dakota Emergency Response Commission Meeting  
Conducted via the Digital Dakota Network

State Capitol Building  
Pierre, SD

South Dakota State University  
Brooking, SD

SD School of Mines and Technology  
Rapid City, SD

Mitchell Technical Institute  
Mitchell, SD

March 24, 2014  
2:00 p.m. CT

CALL TO ORDER AND ROLL CALL: Vice Chairman Joe Nadenicek called the meeting to order. The roll was called and a quorum was present.

COMMISSION MEMBERS PRESENT: Robert McGrath, Joe Nadenicek, Becky Pitz, Paul Merriman, Mike Carter, John Forman, Patrick Snyder, and Bob Van Winsen sitting in for Kristi Turman.

COMMISSION MEMBER ABSENT: Andrew Canham.

PRESENT VIA TELEPHONE CONFERENCE CALL: Mary Beth Vasco, FEMA, and Janet Heeter, EPA.

OTHERS PRESENT: See attached attendance sheets.

INTRODUCTIONS: Participants at the DDN sites introduced themselves.

APPROVAL OF MINUTES FROM DECEMBER 16, 2013, MEETING: Motion by Forman, seconded by Carter, to approve the minutes from the December 16, 2013, State Emergency Response Commission meeting. A roll call vote was taken, and the motion carried unanimously.

FEDERAL UPDATE (EPA): No update.

FEDERAL UPDATE (FEMA): Mary Beth Vasco provided an update on recent FEMA activities.

TIER II REPORTING UPDATE: Trish Kindt reported that the annual bulk storage Tier II reports were due March 1, 2014. The Tier II reports are accepted on paper forms, electronically, and through the South Dakota online reporting website. This is the first year the South Dakota online reporting tool has been used, and approximately half of the reporting facilities used it this year.

Staff will be working on improvements to the reporting tool for the next reporting year. One of the improvements staff will be working on is making it easier for emergency managers and fire departments to access the data that is reported to the department online.

As of today, Tier II reports have been received from 1,587 facilities. Ms. Kindt has been contacting the facilities that haven't yet submitted the Tier II reports.

Fees collected to date total \$93,600, but the Tier II fee payment deadline is April 1, 2014, so some of the facilities have not yet submitted the fees. Last year, \$92,800 in Tier II fees was submitted by 1,759 facilities.

Ms. Kindt answered questions from the SERC members.

Chairman McGrath arrived at the meeting at this time. Vice Chairman Nadenicek turned the gavel over to Chairman McGrath.

SERC REVIEW AND APPROVAL OF LEPC ROSTERS: Ms. Kindt reported that she has received rosters from 52 LEPCs. Butte County LEPC and Edmunds County LEPC have both indicated that they plan to submit rosters following election of officers in April.

Ms. Kindt noted Haakon, Jackson, Jones, Meade, Shannon and Todd counties do not have an active LEPC and have not submitted rosters.

Ms. Kindt reported that she reviewed the rosters and while some of the LEPCs need to work on certain sectors of representation on their rosters, she recommended approval of all of the rosters that were submitted.

Motion by Nadenicek, seconded by Pitz, to approve the rosters for the 52 LEPCs, and to conditionally approve the rosters for of Butte and Edmunds LEPC once election of officers is held and the rosters are submitted. A roll call vote was taken, and the motion carried unanimously.

Motion by Nadenicek, seconded by Forman, that Chairman McGrath send a letter appointing the County Commission, State's Attorney, Emergency Manager, and County Sheriff to serve as the LEPC for the following counties that have not submitted rosters, unless they submit rosters before the next SERC meeting: Haakon, Jackson, Jones, Meade, Shannon and Todd. The appointment is effective until such time as a roster has been submitted and accepted by the SERC. A roll call vote was taken, and the motion carried unanimously.

IMPROVING UTILIZATION OF TIER II DATA: Ms. Kindt requested suggestions from SERC members for improving utilization of Tier II data in South Dakota. The data exists and it can be helpful, but it is a challenge to get local volunteers to look through the Tier II data to determine what chemicals are located in their community.

Ms. Kindt stated that every year after the Tier II report data is entered into the computer, it is sent to the local emergency managers. This year with the new online reporting tool, emergency managers are able to log in and see the data that was submitted online. In the future staff is planning to eventually have the data online in a map format.

Paul Merriman said the State Fire Marshall's office is willing to provide the online link to the information to all of the fire departments within the state.

Patrick Snyder commented that for the Pierre Fire Department, following receipt of the reports by the chief, they are filed. He noted that it would be helpful if a general summary of the chemicals being stored in certain areas was available and easily retrievable; for example, as an email attachment or the online link provided in an email.

Mike Carter suggested that when each county updates their hazardous materials plan to be eligible for grant funds, a list of stored chemicals be included for the individual fire chiefs for those facilities that are in their jurisdictions. The emergency manager could contact the fire chief who would then sign off on it saying the list was provided to him. This would be one of providing the information to the fire departments before there is a fire.

Chairman McGrath said if the SERC members have any other ideas they should contact Ms. Kindt.

Ms. Kindt, Mr. Merriman, and Mr. Snyder will work together on making this information available to the fire departments.

PHMSA (PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION)  
PROPOSED CHANGES TO THE HMEP GRANT PROGRAM: Bob Van Winsen reported on the pat procedure for distributing grant funds to the LEPCs.

HMEP now requires that the state submit its application earlier than in the past, which allows more time for the grant funds to be approved and distributed. The guidelines have been expanded to allow more hazmat team members to attend conferences, allow more classes in-state rather than sending people to training out of state.

Mr. Van Winsen is working with the State Fire Marshall's Office and the hazmat team in Rapid City on an advanced awareness class that goes above and beyond the four-hour class that is now available. Recently, there have been more requests for a higher level of training. He stated that even though most of the volunteer fire departments do not have the high-end equipment, the firemen still need the knowledge.

Mr. Van Winsen answered questions from the SERC members.

HMEP GRANTS, TRAINING, AND PLANNING REPORT: Mr. Van Winsen provided the first quarter review of the FFY 2013 (Oct. 1, 2013-Sept. 30, 2014) HMEP training and planning grant activities. He noted that the training grant was \$139,824 and the planning grant was \$75,409.

To date, \$120,162 has been allocated for training and \$25,940 has been allocated for planning.

Mr. Van Winsen stated that HMEP grant planning funds which have not been requested through the application process are also available to be used for training upon request. The request must be made to the grant administrators in Washington DC. The state of South Dakota has utilized the





Patrick M. Brady CIH, CSP  
Director, Hazardous Materials  
Special Operations

BNSF Railway Company

4200 Deen Road  
Fort Worth, TX 76106  
817-740-7358  
817-740-7250  
[Patrick.Brady@bnsf.com](mailto:Patrick.Brady@bnsf.com)

**Sensitive Security Information  
Railroad Restricted Material**

June 6, 2014

Ms. Trish Kindt  
DENR-SERC  
523 East Capitol Avenue  
Pierre, SD 57501

RECEIVED

JUN 09 2014

Dept. of Environment &  
Natural Resources  
GROUND WATER QUALITY

Re: U.S. Department of Transportation Emergency Order Docket Number DOT-OST-2014-0067 (Issued May 7, 2014)

Dear Ms. Kindt:

Pursuant to the above referenced Emergency Order, I am enclosing the information required by the United States Department of Transportation (“D.O.T.”) to be provided to your state: a copy of the traffic flow summary for crude oil shipments in your state through each county. It is important to note that this information is subject to several restrictions on its release and exemptions from both state and federal applicable Freedom of Information laws and should only be provided to persons meeting with the appropriate need-to-know as discussed below. BNSF considers this information commercial confidential and business confidential information and Security Sensitive Information pursuant to Federal law, and the documents have been marked accordingly.

The D.O.T.’s guidance states that “This data is intended for those persons with a need-to-know; that is, first responders at the State and local level, as well other appropriate emergency response planners. DOT expects the SERCs to treat this data as confidential, providing it only to those with a need-to-know, and with the understanding that recipients of the data will continue to treat it as confidential. Accordingly, railroads may require reasonable confidentiality agreements prior to providing this information”. BNSF trusts that each agency will maintain the confidentiality of this information in accordance with D.O.T.’s stated expectation.

Under federal homeland security regulations, this data is also considered sensitive security information and is **ONLY** to be shared with individuals having a “need to know” as defined by statute. Here, the information is being provided to government personnel with emergency response, planning and/or security-related responsibilities. Please distribute this information only to those people who have a direct “need to know” as

**Warning:** This record contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a “need to know”, as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.

defined by regulation with a copy of this letter. The key purpose of the emergency order is to ensure local responders understand if crude oil is being routed through their counties and potential volumes for the purpose of developing emergency response plans.

BE FURTHER ADVISED, numerous federal and state regulatory restrictions prohibit BNSF or those receiving this information from publicizing data on train volumes and routing. These include, but are not limited to the following:

1. Federal regulation prohibits sensitive security information relating to transportation shipments from being released. The SSI regulations are under three different federal agencies:
  - Department of Transportation: 49 CFR Subtitle A (Part 15)
  - Department of Homeland Security: 49 CFR Chapter XII (Part 1520)
  - Pipeline and Hazardous Materials Safety Administration: 49 CFR Subtitle B Chapter I (Part 172.820)
  - Also see attached STB protective order as further example of treatment and restriction on disclosure of SSI:  
[http://www.stb.dot.gov/decisions/readingroom.nsf/UNID/369FD392053798F985257975005464D3/\\$file/42116.pdf](http://www.stb.dot.gov/decisions/readingroom.nsf/UNID/369FD392053798F985257975005464D3/$file/42116.pdf)
2. BNSF considers this information to be proprietary and confidential trade secret and business information and is providing it to your agency with the expectation and understanding that you will not share it with anyone who does not have a "need to know" such information for emergency response, planning and/or security-related responsibilities.
  - 49 CFR Parts 15 and 1520 defines SSI as including information that would "Reveal trade secrets or privileged or confidential information. . ."
  - Pursuant to Federal Statute, information relating to the route, kind, quantity routing of a shipper's property is competitively sensitive information that shall not be disclosed by a railroad. 49 USC § 11904.

BNSF recognizes the important role community emergency planning and responding personnel play in protecting our communities and is committed to providing information needed to support these efforts within the limits defined by law. Although security regulations allow for limited disclosure of this information, we must all be cognizant that there is a real potential for the criminal misuse of this data in a way that could cause harm to your community or other communities along the rail route. BNSF is providing this information to you with the understanding that your agency can and will protect such

**Warning:** This record contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.



***Sensitive Security Information  
Railroad Restricted Material***

information from public disclosure. Each agency that receives this information is responsible for compliance with these restrictions.

In the event that you are asked to disclose or provide this information via an open records or other request to which your or another agency believes this information is responsive, BNSF requires that you immediately notify me at 817-740-7358 or by email at Patrick.Brady@bnsf.com so that BNSF can determine whether legal or other action to prevent disclosure is appropriate.

Sincerely,

*Patrick Brady*

Director Hazardous Materials  
Special Operations  
BNSF Railway

**Warning: This record contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.**

Bakken Region Crude Weekly Train Tracking

Baseline Low      Baseline High

State/County/Route	Loaded Train Counts 5/29/2014 - 6/4/2014
SD	
MINNEHAHA	3
YANKTON	0
PERKINS	0
KINGSBURY	0
BROWN	0
SULLY	0
CLARK	0
HYDE	0
CLAY	0
LINCOLN	0
CODINGTON	0
SANBORN	0
CORSON	0
UNION	0
CUSTER	0
HUTCHINSON	0
DAVISON	0
JERAULD	0
DAY	0
LAKE	0
EDMUNDS	0
BON HOMME	0
MCCOOK	0
FALL RIVER	0
ROBERTS	0
GRANT	0
SPINK	0
HAMLIN	0
TURNER	0
HAND	0
WALWORTH	0
HANSON	0
BEADLE	0
HUGHES	0

**Warning:** This record contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.

## DESCRIPTION OF PETROLEUM CRUDE OIL BEING TRANSPORTED

UN1267  
PETROLEUM CRUDE OIL  
3  
PG I or II  
HMRC (STCC) 4910165 or 4910191

### Details:

UN1267 – Unique identification number assigned by DOT

PETROLEUM CRUDE OIL – Proper DOT shipping name

3 – Indicates the DOT hazard class. Hazard class 3 is flammable liquid

PG – Packing Group further describes the hazard class based on the materials flash point and initial boiling point as follows:

Packing group	Flash point (closed-cup)	Initial boiling point
I		≤35 °C (95 °F)
II	<23 °C (73 °F)	>35 °C (95 °F)
III	≥23 °C, ≤60 °C (≥73 °F, ≤140 °F)	>35 °C (95 °F)

Bakken petroleum crude is shipped as either PG I or PG II

HMRC (STCC) – Hazardous Materials Response Code (Standard Transportation Commodity Code) drives emergency response information included as part of railroad shipping papers (see Attachment 3). Most petroleum crude uses 4910165. Crude oil from the Bakken region will soon carry 4910191 as the HMRC.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### GENERAL INFORMATION

Petroleum crude oil is a flammable, variably light to dark colored liquid hydrocarbon with properties between gasoline and kerosene. It is used as a raw material for making fuels and various chemicals. Barely soluble in water and slightly lighter, petroleum crude oil will form a floating surface slick. Flammability of this product can vary widely having a flash point range from -45 to 392°F. The liquid may evaporate easily even at low temperatures. The vapors of the more volatile, and therefore more flammable crude oil, are heavier than air, may accumulate and persist in low areas, and may travel some distance to a source of ignition and flash back. Similarly, accumulations of vapor in confined spaces such as buildings or sewers may explode if ignited and there is some potential that containers of liquid may rupture violently if exposed to fire or excessive heat for sufficient time duration. Typical crude oil weigh approximately 6.3-8.3 pounds per gallon.

Petroleum crude oil will not react with water or other common materials and is stable in normal transportation. It is incompatible with strong oxidizers, and may attack some forms of plastics, rubber, and coatings. Toxicity by potential routes of exposure is generally considered low to moderate. The more volatile mixtures may be present in air in high concentrations creating an inhalation hazard. There is also the possibility that the crude oil may contain some fraction of toxic benzene or hydrogen sulfide (see separate guides). Products of combustion may include toxic constituents.

### CHEMICAL/PHYSICAL DATA

**Solubility in Water:** Practically insoluble, below 0.1%

**Solubility in Other Chemicals:** Soluble in various hydrocarbon liquids.

**Specific Gravity (Liquid):** Varies, 0.75 - 0.99

**Vapor Density:** 3.4 (approximately)

**Boiling Point:** Varies, 1000+°F (538+°C).

**Melting Point:** Unavailable

**Freezing Point:** Unavailable

**Molecular Weight:** Complex mixture, approximately 99

**Heat of Combustion:** 10,290 - 10,460 cal/g (Petroleum distillates)

**Evaporation Rate (butyl acetate=1):** 10 (approximately)

**Vapor Pressure:** Varies widely with composition, 40 mmHg for petroleum distillates.

**Flash Point:** Varies widely -45 to 392°F (-43 to 200°C)

**Autoignition Temperature:** 450 - 500°F (232 - 260°C)

**Burning Rate:** 4 mm/minute

**Flammable Limits:** 0.4% (LEL) - 15% (UEL)

**Stability:** Stable

**Polymerization Potential:** Will not occur.

**Corrosiveness:** Relatively noncorrosive but may attack some forms of plastics, rubber, and coatings.

**Reactivity with Water:** No reaction

**Reactivity and Incompatibility:** Reacts with strong oxidizing materials. Avoid chlorine, fluorine.

### IDENTIFICATION

**Shipping Name(s):** Petroleum crude oil (USDOT & IMO).

**Synonyms and Tradenames:** Crude oil ; Mineral oil; Rock oil; Coal oil; Petroleum.

**CAS Registry No.:** 8002-05-9

**Chemical Formula:** C<sub>6</sub>-C<sub>13</sub> hydrocarbon mixture. Crude oil is a naturally occurring complex mixture of hydrocarbons whose exact composition and physical properties can vary widely depending upon its source.

**Constituent Components (% each):** Complex mixture of petroleum hydrocarbons; may contain 0-10% benzene.

**UN/NA Designation:** UN1267

**IMO Designation:** 3.1, 3.2 or 3.3, Flammable liquids

**NFPA 704 Hazard Rating:** 2(Health); 3(Flammability); 0(Reactivity)

**Physical Form as Shipped:** Liquid

**Physical Form as Released:** Liquid

**Color of the Shipped Material:** Dark yellow to brown or greenish-black, oily liquid.

**Odor Characteristics:** Like gasoline and kerosene

**Reportable Quantity:** See appendix I.

**Common Uses:** Raw material for making fuels and various chemicals.

**ADDITIONAL INFORMATION AND ASSISTANCE: FOR 24-HOUR TECHNICAL SUPPORT FOR ACCIDENTS INVOLVING SPILLS, LEAKS, FIRES OR EXPOSURES TO CHEMICALS, CONTACT CHEMTREC AT (800) 424-9300 OR (703) 527-3887 (COLLECT).**

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid



or



or



### POTENTIAL HAZARDS

#### GENERAL HAZARDS

**Threshold Odor Concentration:** Varies

**Unusual Hazards:** Properties uncertain. Vapors of some crude oil may be heavier than air and may travel to a source of ignition. Some may include significant amounts of benzene (see separate guide).

**Short Term Exposure Limit (STEL):** Unavailable

**Time Weighted Average (TLV-TWA):** 86 ppm (350 mg/m<sup>3</sup>) (Petroleum distillates).

**Ceiling (C) Limit:** 444 ppm (1800 mg/m<sup>3</sup>) (Petroleum distillates).

**IDLH:** 1100 ppm or 10% LEL (Petroleum distillates).

**Conditions to Avoid:** Heat, fire, or sparks; contact with incompatible materials; runoff to sewers or water bodies; inhalation, ingestion, or direct physical contact.

#### HEALTH HAZARDS

**Public Health Hazards:** Major hazard is from inhalation of high vapor concentrations in air. Ingestion and direct contact are also to be avoided. (Note: Any benzene in the product increases both acute and chronic health risks.)

**Hazards of Skin or Eye Contact:** Repeated or prolonged contact with liquid petroleum crude oil may cause drying, cracking, and inflammation of the skin due to the defatting action of the product. Contact with the eyes may result in irritation and possibly temporary corneal injury.

**Hazards of Inhalation:** Vapors of petroleum crude oil may be irritating to the eyes and the upper respiratory tract. High concentrations in air may result in narcosis and central nervous system depression with symptoms including inebriation, headache, nausea, dizziness, drowsiness, unconsciousness, convulsions, and possibly death. Some symptoms may be evident after 1 hour at 4000-7000 ppm in air. Acute overexposure may also result in persistent anorexia and nervousness on occasion.

**Hazards of Ingestion:** Ingestion may cause a burning sensation, vomiting, diarrhea, drowsiness, and symptoms listed above. Aspiration into the lungs during vomiting may result in pulmonary edema with possibly severe consequences.

#### FIRE HAZARDS

**Lower Flammable Limit:** 0.4%

**Upper Flammable Limit:** 15%

**Behavior in Fire:** Flammable liquid. Liquid will burn but may be difficult to ignite depending on constituents. Flammable liquids may generate large quantities of flammable vapor upon release. Vapors of flammable liquids are heavier than air, may accumulate and persist in low areas, and may travel to a source of ignition and flash back. There is some potential that containers may rupture violently in fire.

**Hazardous Decomposition Products:** Not well-defined, may include toxic constituents such as carbon monoxide, carbon dioxide, oxides of sulfur and reactive hydrocarbons.

#### EXPLOSION HAZARDS

**Explosive Potential:** Explosion may result if vapors are ignited in a confined area. There is some potential that containers may rupture violently in fire. Product is sensitive to static discharge and is an extreme fire hazard. Vapors can burn with explosive violence.

1267

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid



### PERSONAL PROTECTIVE CLOTHING AND EQUIPEMENT

**Protective Clothing Required:** Equipment should prevent repeated or prolonged skin contact and any reasonable probability of eye contact with the spilled product. This may include rubber boots, gloves, face shields, splash-proof safety goggles, and other impervious and resistant clothing. Compatible materials may include neoprene, nitrile rubber, chlorinated polyethylene, polyurethane, polyvinyl alcohol, Viton®, and nitrile-butadiene rubber.

**Respiratory Protection:** For unknown concentrations, fire fighting, or high concentrations, a self-contained breathing apparatus (SCBA) with full facepiece. For lesser concentrations, an air purifying respirator (APR) with organic vapor cartridge with a full facepiece within the use limitations of these devices.

### FIRST AID

**Nonspecific Symptoms:** Irritation of the eyes, skin, or respiratory tract; other symptoms of exposure.

**First Aid for Inhalation:** Remove victim to fresh air and keep warm and at rest. If breathing becomes difficult or if breathing has stopped, administer artificial respiration. Get medical attention immediately. (Caution: Administration of mouth-to-mouth resuscitation may expose the first aid provider to chemical within the victim's lungs or vomit.)

**First Aid for Skin Contact:** In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids apart in order to rinse entire surface of eye and lids with water. Provide supportive care and seek immediate medical assistance by a physician from the nearest medical treatment facility.

**First Aid for Eye Contact:** Remove all contaminated clothing. Wash affected body areas with large amounts of water. Decontaminate the patient thoroughly before transporting to a medical treatment facility to prevent the potential for secondary contamination.

**First Aid for Ingestion:** Do not induce vomiting. Keep victim warm and at rest. Get medical attention immediately.

**Note to Physician:** Hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

### FIRE RESPONSE

**Extinguishing Agents:** Carbon dioxide, dry chemical, foam, or water spray. Water may be ineffective and there is some possibility that foam or water may cause some frothing.

**Extinguishing Techniques:** Stay upwind. Wear breathing apparatus and appropriate protective clothing. Move container from fire area if no risk. Do not extinguish burning cargo unless flow can be stopped safely. Be alert to container rupture potential. Stay away from ends of tank involved in fire but realize that shrapnel may travel in any direction. Use water from side and from safe distance to keep fire exposed containers cool. For massive fire in cargo area, use unmanned hose holder or monitor nozzles. Withdraw immediately in case of rising sound from venting safety device or discoloration of tank.

**Note:** Crude oil fires may produce a highly dangerous phenomenon known as a BOILOVER, whereby light hydrocarbons burn off at the surface of the fire and heavy superheated hydrocarbons sink to the bottom and come in contact with water bottoms. The super heated product converts the water to steam and forces burning crude oil out of the tank. Burning crude oil which has accumulated in tanks or diked areas are susceptible to boilovers. Seek expert advice on how to fight a crude oil fire.

### SPILL RESPONSES

**General Information:** Proceed with caution. Restrict access to area. Keep unprotected personnel upwind of spill area.

Eliminate ignition sources. Prevent liquid from entering sewers and confined spaces. Protect sewers and waterways from contaminated runoff. Notify proper authorities, downstream sewer and water treatment operations, and other downstream users of potentially contaminated water. Note that intake of petroleum crude oil may result in rupture or explosion of boilers or industrial process equipment. Use intrinsically safe equipment where necessary. Choose equipment, where possible, that is not corroded or otherwise damaged by the spilled product. Take the specific flammability hazard and possible volatility of the spilled product into account while planning the response.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### AIR RELEASE

#### TECHNIQUE

MONITOR THE SITUATION . . . The product may not produce large amounts of hazardous airborne contaminants in many outdoor spill situations. It may be advisable in some cases to simply monitor the situation until the spilled product is removed by product and container specialists.

#### CONSEQUENCE

Hazardous levels of product in air may be found in the local spill area and immediately downwind.

#### MITIGATION

Remove the spilled product as soon as possible. Restrict access to the local spill area and areas immediately downwind by unprotected personnel.

#### TECHNIQUE

WATER FOG OR SPRAY . . . Water fog or spray applied to petroleum crude oil vapors or fumes may accelerate their dispersal in the atmosphere. (Note: There is some possibility that water may cause frothing.)

#### CONSEQUENCE

Increases in spill surface area and atmospheric conditions may increase the rate of vapor generation. In enclosed areas, runoff may add to spill volume and overflow impoundments. Water runoff may contain a small amount (if any) of petroleum crude oil from contact with airborne vapors or fumes.

#### MITIGATION

Contain contaminated water and remove or treat as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may add to spill volume and overflow impoundments.

#### TECHNIQUE

FOAM . . . Firefighting foam applied to the surface of liquid pools may slow the release of petroleum crude oil vapors into the atmosphere. (Note: There is some possibility that foam may cause frothing.)

#### CONSEQUENCE

The effects of the foam may be short term. As the foam breaks down, release of vapors will increase. Products of foam breakdown will add to the volume of spilled material.

#### MITIGATION

Continue foam applications until spilled product is removed. Contain foam runoff and treat as hazardous waste.

### LAND SPILL

#### TECHNIQUE

CONFINEMENT DIKES . . . Petroleum crude oil may be confined by building dikes using soil, sand or other materials.

#### CONSEQUENCE

Confined petroleum crude oil may percolate into soil or seep through dike material. This may result in loss of confined product and spread of contamination.

#### MITIGATION

Remove or neutralize contained product as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may overflow impoundments. Where possible, line collection area with compatible impervious materials.

#### TECHNIQUE

EXCAVATION . . . Spills of material may be confined by building trenches or ditches.

#### CONSEQUENCE

Material may leach into soil. Deep excavations may increase the potential for groundwater contamination in some areas. This may result in loss of confined product and spread of contamination.

#### MITIGATION

Remove material from contaminated area as quickly as possible to prevent possible contamination beyond the spill area. Water sprays may be used to reduce vapors, except in enclosed areas where runoff may accumulate and overflow impoundments. Be alert to condition such as increasing spill volume with runoff or rain water which may overflow diked areas. If possible, confinement areas should be lined with suitable, impervious material to prevent penetration into soil.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### **TECHNIQUE**

**PUMPING/VACUUM SUCTION** . . . Spilled material confined in diked areas may be recovered using compatible hoses, pumps and vacuum trucks. All product transfer equipment should be properly bonded and grounded.

### **CONSEQUENCE**

Equipment that is not compatible with the spilled product may become damaged and present a safety hazard for response personnel. Mechanical equipment will become contaminated with removed product.

### **MITIGATION**

Use equipment constructed of materials compatible with the spilled product. Decontaminate equipment.

### **TECHNIQUE**

**ABSORPTION** . . . Spreading of spilled product may be controlled by absorbing liquid with sand, earth, clay, fly ash, cement powder, peat moss, saw dust, straw, commercial sorbents, or other compatible substances.

### **CONSEQUENCE**

Once used, sorbent materials pose the same hazards as the spilled product. Their use adds to the overall volume of contaminated material.

### **MITIGATION**

Deplete accumulated liquid pools with pumps or vacuum trucks if possible before applying sorbents. Remove contaminated sorbents to safe storage by mechanical means.

### **TECHNIQUE**

**MECHANICAL REMOVAL** . . . Soil contaminated with spilled material may be removed by shovels, as well as a variety of heavy equipment such as backhoes and loaders.

### **CONSEQUENCE**

Mechanical equipment used in clean-up operations may become contaminated and present a safety and/or health hazard to response personnel. Any flammable vapors present in the area may be ignited by motorized removal equipment.

### **MITIGATION**

Use equipment constructed of materials compatible with the spilled product. Decontaminate equipment. Continually monitor for presence of flammable vapors.

## **WATER SPILL**

### **TECHNIQUE**

**STOP USE** . . . Notify downstream industrial, municipal and public users to stop water intake or to monitor water for contamination.

### **CONSEQUENCE**

Alternative water supplies may be needed to be established. Consult environmental specialists for assistance, as needed.

### **MITIGATION**

Provide alternative water supplies as needed until water supply is declared safe.

### **TECHNIQUE**

**FLOATING BOOMS/BARRIERS** . . . Oil spill confinement booms of compatible material may be deployed.

Alternatively, mesh or nets may be strung across stream and anchored every 6-8 feet. Straw or peat placed on upstream side of mesh should absorb and retard spreading of spilled product.

### **CONSEQUENCE**

Leakage may occur under or through barrier if high waves or current present or if not properly deployed. Incompatible materials may be damaged by spilled product. Booms, barrier materials, and deployment equipment may be contaminated. Fire hazards pose risk to response personnel and equipment.

### **MITIGATION**

Proceed with caution. Stage barriers in series where necessary. Recover spilled product as soon as possible. Decontaminate equipment after use. Dispose of waste materials in proper and safe manner. Use compatible equipment. Eliminate ignition sources.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### **TECHNIQUE**

**WATER UNDER-FLOW DAMS . . .** Streams may be provided with an under-flow dam. This is a dam made of compacted earth, clay, or other material with open tubes or pipes passing through under water. Upstream ends of pipes or tubes should be well below the layer of floating contaminant. Downstream ends should be at a higher elevation but still below the floating layer. Valves may be installed on downstream ends to control water flow.

### **CONSEQUENCE**

Earthen dams may become saturated with water and seep through or collapse. An insufficient number of under-flow tubes or pipes or additional water may cause overflow.

### **MITIGATION**

Use sufficient number and capacity of tubes or pipes. Be alert for conditions that may lead to overflow, saturation or dam collapse. Remove spilled product as soon as possible.

### **TECHNIQUE**

**DIVERSION . . .** Where other means are unavailable, floating slicks may be temporarily herded, diverted, or controlled using water hose streams, small boat propeller wash or chemical surface tension modifiers known as spill herders.

### **CONSEQUENCE**

Hose streams and propeller washes have limited applicability and effectiveness. The latter may cause undesired mixing of spilled product and water due to extreme agitation. Chemical spill herders should not be used until approval is obtained from authorized environmental officials.

### **MITIGATION**

Use other means if available.

### **TECHNIQUE**

**SURFACE SKIMMING . . .** Oil spill skimming devices may be deployed to recover floating petroleum crude oil.

### **CONSEQUENCE**

Incompatible equipment may be damaged. Equipment may be contaminated and pose hazard to future users. Fire hazard may pose risk to response personnel and equipment.

### **MITIGATION**

Decontaminate equipment after use. Use compatible equipment. Store recovered product in safe and secure location. Eliminate ignition sources.

### **TECHNIQUE**

**ABSORPTION . . .** Straw, hay, peat, or commercial sorbent materials compatible with petroleum crude oil may be used to absorb spilled product from the water surface, preferably after the spill has been confined.

### **CONSEQUENCE**

Once used, sorbent materials pose the same hazards as the spilled product. Their use adds to the overall volume of contaminated material. Deployment and recovery can be difficult. Fire hazards pose risk to response personnel and equipment.

### **MITIGATION**

Deplete accumulated liquid pools with pumps or vacuum trucks if possible before applying sorbents. Decontaminate equipment after use. Store and dispose of waste materials in proper and safe manner. Use compatible equipment. Eliminate ignition sources.

**Attachment 2B**  
**DOT-OST-2014-0067**  
**Emergency Response Information**  
**Source: AAR**

---

PETROLEUM CRUDE OIL  
CLASS 3 (FLAMMABLE LIQUID)

4910191  
UN1267

PETROLEUM CRUDE OIL IS A DARK VISCOUS LIQUID. IT HAS A FLASH POINT OF LESS THAN 141 DEG. F. IT IS LIGHTER THAN WATER AND INSOLUBLE IN WATER. ITS VAPORS ARE HEAVIER THAN AIR.

IF MATERIAL ON FIRE OR INVOLVED IN FIRE  
DO NOT EXTINGUISH FIRE UNLESS FLOW CAN BE STOPPED  
USE WATER IN FLOODING QUANTITIES AS FOG  
SOLID STREAMS OF WATER MAY SPREAD FIRE  
COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER  
APPLY WATER FROM AS FAR A DISTANCE AS POSSIBLE  
USE FOAM, DRY CHEMICAL, OR CARBON DIOXIDE

IF MATERIAL NOT ON FIRE OR NOT INVOLVED IN FIRE  
KEEP SPARKS, FLAMES, AND OTHER SOURCES OF IGNITION AWAY  
KEEP MATERIAL OUT OF WATER SOURCES AND SEWERS  
BUILD DIKES TO CONTAIN FLOW AS NECESSARY  
ATTEMPT TO STOP LEAK IF WITHOUT UNDUE PERSONNEL HAZARD  
USE WATER SPRAY TO KNOCK-DOWN VAPORS

PERSONNEL PROTECTION  
AVOID BREATHING VAPORS  
KEEP UPWIND  
WEAR APPROPRIATE CHEMICAL PROTECTIVE GLOVES, BOOTS AND GOGGLES  
DO NOT HANDLE BROKEN PACKAGES UNLESS WEARING  
APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT  
WASH AWAY ANY MATERIAL WHICH MAY HAVE CONTACTED THE BODY  
WITH COPIOUS AMOUNTS OF WATER OR SOAP AND WATER

ENVIRONMENTAL CONSIDERATIONS - LAND SPILL  
DIG A PIT, POND, LAGOON, HOLDING AREA  
TO CONTAIN LIQUID OR SOLID MATERIAL  
DIKE SURFACE FLOW USING SOIL, SAND BAGS,  
FOAMED POLYURETHANE, OR FOAMED CONCRETE  
ABSORB BULK LIQUID WITH FLY ASH, CEMENT POWDER,  
OR COMMERCIAL SORBENTS

ENVIRONMENTAL CONSIDERATIONS - WATER SPILL  
USE NATURAL BARRIERS OR OIL SPILL CONTROL BOOMS TO LIMIT SPILL TRAVEL  
REMOVE TRAPPED MATERIAL WITH SUCTION HOSES

ENVIRONMENTAL CONSIDERATIONS - AIR SPILL  
APPLY WATER SPRAY OR MIST TO KNOCK DOWN VAPORS

FIRST AID RESPONSES  
MOVE VICTIM TO FRESH AIR; CALL EMERGENCY MEDICAL CARE.  
IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION.  
IF BREATHING IS DIFFICULT, GIVE OXYGEN.  
IN CASE OF CONTACT WITH MATERIAL, IMMEDIATELY FLUSH SKIN OR EYES WITH  
RUNNING WATER FOR AT LEAST 20 MINUTES.  
REMOVE AND ISOLATE CONTAMINATED CLOTHING AND SHOES AT THE SITE.

Attachment 2C  
 DOT-OST-2014-0067  
 Emergency Response Information  
 Source: 2012 Emergency Response Guidebook

ERG2012 FLAMMABLE LIQUIDS (NON-POLAR/WATER-IMMISCIBLE) **GUIDE 128**

**EMERGENCY RESPONSE**

**FIRE**  
**CAUTION:** All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.  
**CAUTION:** For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

**Small Fire**

- Dry chemical, CO<sub>2</sub>, water spray or regular foam.

**Large Fire**

- Water spray, fog or regular foam.
- Do not use straight streams.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

**SPILL OR LEAK**

- ELIMINATE all ignition sources (no smoking, flames, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

**Large Spill**

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

**FIRST AID**

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Page 195

**GUIDE 128** FLAMMABLE LIQUIDS (NON-POLAR/WATER-IMMISCIBLE) ERG2012

**POTENTIAL HAZARDS**

**FIRE OR EXPLOSION**

- **HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- For UN3166, if Lithium ion batteries are involved, also consult GUIDE 147.
- **If molten aluminum is involved, refer to GUIDE 169.**

**HEALTH**

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

**PUBLIC SAFETY**

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first, if Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

**PROTECTIVE CLOTHING**

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

**EVACUATION**

**Large Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Page 194

**Attachment 3  
OOT-OST-2014-0067  
BNSF Railway's Point of Contact**

**POINT OF CONTACT**

Issues and questions relating to the transportation of Bakken crude please contact:

Patrick Brady CIH, CSP  
Director, Hazardous Materials Special Operations  
BNSF Railway  
4200 Deen Road  
Fort Worth, TX 76104  
817-740-7358  
Patrick.Brady@bnsf.com



Patrick M. Brady CIH, CSP  
Director, Hazardous Materials  
Special Operations

BNSF Railway Company  
4200 Deen Road  
Fort Worth, TX 76106  
817-740-7358  
817-740-7250  
[Patrick.Brady@bnsf.com](mailto:Patrick.Brady@bnsf.com)

## **Railroad Restricted Material**

**June 13, 2013**

Trish Kindt  
DENR-SERC  
523 East Capitol Avenue  
Pierre, SD 57501

**RECEIVED**

**JUN 16 2014**

**Dept. of Environment &  
Natural Resources  
GROUND WATER QUALITY**

**Re: U.S. Department of Transportation Emergency Order Docket Number DOT-OST-2014-0067 (Issued May 7, 2014)**

Dear Ms. Trish Kindt:

Pursuant to the above referenced Emergency Order, on June 5, 2014 you were sent a copy of the traffic flow summary for crude oil shipments in your state through each county. Also pursuant to the Emergency Order we are required to "update notifications when there is a material change in the volume (+/- 25%) of those trains." The attached report provides this updated traffic flow summary.

It is important to note that this information is subject to several restrictions upon its release and exemptions from both state and federal applicable Freedom of Information laws. This information should only be provided to persons meeting the appropriate need-to-know requirements discussed below. BNSF considers this information Railroad Restricted Material, commercial confidential and business confidential information and pursuant to Federal Law the documents have been marked accordingly.

The D.O.T.'s guidance states that "This data is intended for those persons with a need-to-know; that is, first responders at the state and local level, as well other appropriate emergency response planners. DOT expects the SERCs to treat this data as confidential, providing it only to those with a need-to-know, and with the understanding that recipients of the data will continue to treat it as confidential. Accordingly, railroads may require reasonable confidentiality agreements prior to providing this information". BNSF trusts that each agency will maintain the confidentiality of this information in accordance with D.O.T.'s stated expectation.

The information is being provided to government personnel with emergency response, planning and/or security-related responsibilities. Please distribute this information only to those people who have a direct "need to know" as defined by regulation with a copy of this letter. The key purpose of the emergency order is to ensure local responders are aware when crude oil is being routed through their counties and the potential volumes for the purpose of developing emergency response plans.

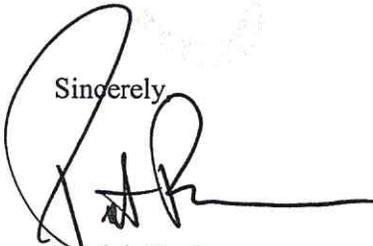
BE FURTHER ADVISED, numerous federal and state regulatory restrictions prohibit BNSF or those receiving this information from publicizing data on train volumes and routing. These include, but are not limited to the following:

- Federal regulation prohibits Railroad Restricted Material information relating to transportation shipments from being released. Attached is the STB protective order as further example of treatment and restriction on disclosure of Railroad Restricted Materials):  
[http://www.stb.dot.gov/decisions/readingroom.nsf/UNID/369FD392053798F985257975005464D3/\\$file/42116.pdf](http://www.stb.dot.gov/decisions/readingroom.nsf/UNID/369FD392053798F985257975005464D3/$file/42116.pdf)
- BNSF considers this information to be proprietary and confidential trade secret and business information. We are providing this information to your agency with the expectation and understanding that you will not share it with anyone who does not have a “need to know” such information for emergency response, planning and/or security-related responsibilities.
- Pursuant to Federal Statute, information relating to the route, kind, quantity routing of a shipper’s property is competitively sensitive information that shall not be disclosed by a railroad. 49 USC§11904.

BNSF recognizes the important role community emergency planning and responding personnel play in protecting our communities and is committed to providing information needed to support these efforts within the limits defined by law. Although security regulations allow for limited disclosure of this information, we must all be cognizant that there is a real potential for the criminal misuse of this data in a way that could cause harm to your community or other communities along the rail route. BNSF is providing this information to you with the understanding that your agency can and will protect such information from public disclosure. Each agency that receives this information is responsible for compliance with these restrictions.

In the event that you are asked to disclose or provide this information via an open records or other request to which your or another agency believes this information is responsive, BNSF requires that you immediately notify me at 817-740-7358 or by email at [Patrick.Brady@bnsf.com](mailto:Patrick.Brady@bnsf.com) so that BNSF can determine whether legal or other action to prevent disclosure is appropriate.

Sincerely



Patrick Brady  
Director Hazardous Materials Special Operations  
BNSF Railway

## Bakken Region Crude Weekly Train Tracking

<u>Baseline Low</u>	<u>Baseline High</u>	State/County/Route	Loaded Train Counts 6/5/2014 - 6/11/2014
0	9	SD	
		MINNEHAHA	3
		YANKTON	0
		PERKINS	0
		KINGSBURY	0
		BROWN	0
		SULLY	0
		CLARK	0
		HYDE	0
		CLAY	0
		LINCOLN	0
		CODINGTON	0
		SANBORN	0
		CORSON	0
		UNION	0
		CUSTER	0
		HUTCHINSON	0
		DAVISON	0
		JERAULD	0
		DAY	0
		LAKE	0
		EDMUNDS	0
		BON HOMME	0
		MCCOOK	0
		FALL RIVER	0
		ROBERTS	0
		GRANT	0
		SPINK	0
		HAMLIN	0
		TURNER	0
		HAND	0
		WALWORTH	0
		HANSON	0
		BEADLE	0
		HUGHES	0

Attachment 1  
DOT-OST-2014-0067  
Identify Petroleum Crude Oil  
Source: 49CFR172(C)

**RECEIVED**  
JUN 16 2014  
Dept. of Environment &  
Natural Resources  
GROUND WATER QUALITY

## DESCRIPTION OF PETROLEUM CRUDE OIL BEING TRANSPORTED

UN1267  
PETROLEUM CRUDE OIL  
3  
PG I or II  
HMRC (STCC) 4910165 or 4910191

### Details:

UN1267 – Unique identification number assigned by DOT

PETROLEUM CRUDE OIL – Proper DOT shipping name

3 – Indicates the DOT hazard class. Hazard class 3 is flammable liquid

PG – Packing Group further describes the hazard class based on the materials flash point and initial boiling point as follows:

Packing group	Flash point (closed-cup)	Initial boiling point
I		≤35 °C (95 °F)
II	<23 °C (73 °F)	>35 °C (95 °F)
III	≥23 °C, ≤60 °C (≥73 °F, ≤140 °F)	>35 °C (95 °F)

Bakken petroleum crude is shipped as either PG I or PG II

HMRC (STCC) – Hazardous Materials Response Code (Standard Transportation Commodity Code) drives emergency response information included as part of railroad shipping papers (see Attachment 3). Most petroleum crude uses 4910165. Crude oil from the Bakken region will soon carry 4910191 as the HMRC.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### GENERAL INFORMATION

Petroleum crude oil is a flammable, variably light to dark colored liquid hydrocarbon with properties between gasoline and kerosene. It is used as a raw material for making fuels and various chemicals. Barely soluble in water and slightly lighter, petroleum crude oil will form a floating surface slick. Flammability of this product can vary widely having a flash point range from -45 to 392°F. The liquid may evaporate easily even at low temperatures. The vapors of the more volatile, and therefore more flammable crude oil, are heavier than air, may accumulate and persist in low areas, and may travel some distance to a source of ignition and flash back. Similarly, accumulations of vapor in confined spaces such as buildings or sewers may explode if ignited and there is some potential that containers of liquid may rupture violently if exposed to fire or excessive heat for sufficient time duration. Typical crude oil weigh approximately 6.3-8.3 pounds per gallon.

Petroleum crude oil will not react with water or other common materials and is stable in normal transportation. It is incompatible with strong oxidizers, and may attack some forms of plastics, rubber, and coatings. Toxicity by potential routes of exposure is generally considered low to moderate. The more volatile mixtures may be present in air in high concentrations creating an inhalation hazard. There is also the possibility that the crude oil may contain some fraction of toxic benzene or hydrogen sulfide (see separate guides). Products of combustion may include toxic constituents.

### CHEMICAL/PHYSICAL DATA

**Solubility in Water:** Practically insoluble, below 0.1%

**Solubility in Other Chemicals:** Soluble in various hydrocarbon liquids.

**Specific Gravity (Liquid):** Varies, 0.75 - 0.99

**Vapor Density:** 3.4 (approximately)

**Boiling Point:** Varies, 1000+°F (538+°C).

**Melting Point:** Unavailable

**Freezing Point:** Unavailable

**Molecular Weight:** Complex mixture, approximately 99

**Heat of Combustion:** 10,290 - 10,460 cal/g (Petroleum distillates)

**Evaporation Rate (butyl acetate=1):** 10 (approximately)

**Vapor Pressure:** Varies widely with composition, 40 mmHg for petroleum distillates.

**Flash Point:** Varies widely -45 to 392°F (-43 to 200°C)

**Autoignition Temperature:** 450 - 500°F (232 - 260°C)

**Burning Rate:** 4 mm/minute

**Flammable Limits:** 0.4% (LEL) - 15% (UEL)

**Stability:** Stable

**Polymerization Potential:** Will not occur.

**Corrosiveness:** Relatively noncorrosive but may attack some forms of plastics, rubber, and coatings.

**Reactivity with Water:** No reaction

**Reactivity and Incompatibility:** Reacts with strong oxidizing materials. Avoid chlorine, fluorine.

### IDENTIFICATION

**Shipping Name(s):** Petroleum crude oil (USDOT & IMO).

**Synonyms and Tradenames:** Crude oil ; Mineral oil; Rock oil; Coal oil; Petroleum.

**CAS Registry No.:** 8002-05-9

**Chemical Formula:** C<sub>6</sub>-C<sub>13</sub> hydrocarbon mixture. Crude oil is a naturally occurring complex mixture of hydrocarbons whose exact composition and physical properties can vary widely depending upon its source.

**Constituent Components (% each):** Complex mixture of petroleum hydrocarbons; may contain 0-10% benzene.

**UN/NA Designation:** UN1267

**IMO Designation:** 3.1, 3.2 or 3.3, Flammable liquids

**NFPA 704 Hazard Rating:** 2(Health): 3(Flammability): 0(Reactivity)

**Physical Form as Shipped:** Liquid

**Physical Form as Released:** Liquid

**Color of the Shipped Material:** Dark yellow to brown or greenish-black, oily liquid.

**Odor Characteristics:** Like gasoline and kerosene

**Reportable Quantity:** See appendix I.

**Common Uses:** Raw material for making fuels and various chemicals.

**ADDITIONAL INFORMATION AND ASSISTANCE: FOR 24-HOUR TECHNICAL SUPPORT FOR ACCIDENTS INVOLVING SPILLS, LEAKS, FIRES OR EXPOSURES TO CHEMICALS, CONTACT CHEMTREC AT (800) 424-9300 OR (703) 527-3887 (COLLECT).**

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid



or



or



### POTENTIAL HAZARDS

#### GENERAL HAZARDS

**Threshold Odor Concentration:** Varies

**Unusual Hazards:** Properties uncertain. Vapors of some crude oil may be heavier than air and may travel to a source of ignition. Some may include significant amounts of benzene (see separate guide).

**Short Term Exposure Limit (STEL):** Unavailable

**Time Weighted Average (TLV-TWA):** 86 ppm (350 mg/m<sup>3</sup>) (Petroleum distillates).

**Ceiling (C) Limit:** 444 ppm (1800 mg/m<sup>3</sup>) (Petroleum distillates).

**IDLH:** 1100 ppm or 10% LEL (Petroleum distillates).

**Conditions to Avoid:** Heat, fire, or sparks; contact with incompatible materials; runoff to sewers or water bodies; inhalation, ingestion, or direct physical contact.

#### HEALTH HAZARDS

**Public Health Hazards:** Major hazard is from inhalation of high vapor concentrations in air. Ingestion and direct contact are also to be avoided. (Note: Any benzene in the product increases both acute and chronic health risks.)

**Hazards of Skin or Eye Contact:** Repeated or prolonged contact with liquid petroleum crude oil may cause drying, cracking, and inflammation of the skin due to the defatting action of the product. Contact with the eyes may result in irritation and possibly temporary corneal injury.

**Hazards of Inhalation:** Vapors of petroleum crude oil may be irritating to the eyes and the upper respiratory tract. High concentrations in air may result in narcosis and central nervous system depression with symptoms including inebriation, headache, nausea, dizziness, drowsiness, unconsciousness, convulsions, and possibly death. Some symptoms may be evident after 1 hour at 4000-7000 ppm in air. Acute overexposure may also result in persistent anorexia and nervousness on occasion.

**Hazards of Ingestion:** Ingestion may cause a burning sensation, vomiting, diarrhea, drowsiness, and symptoms listed above. Aspiration into the lungs during vomiting may result in pulmonary edema with possibly severe consequences.

#### FIRE HAZARDS

**Lower Flammable Limit:** 0.4%

**Upper Flammable Limit:** 15%

**Behavior in Fire:** Flammable liquid. Liquid will burn but may be difficult to ignite depending on constituents. Flammable liquids may generate large quantities of flammable vapor upon release. Vapors of flammable liquids are heavier than air, may accumulate and persist in low areas, and may travel to a source of ignition and flash back. There is some potential that containers may rupture violently in fire.

**Hazardous Decomposition Products:** Not well-defined, may include toxic constituents such as carbon monoxide, carbon dioxide, oxides of sulfur and reactive hydrocarbons.

#### EXPLOSION HAZARDS

**Explosive Potential:** Explosion may result if vapors are ignited in a confined area. There is some potential that containers may rupture violently in fire. Product is sensitive to static discharge and is an extreme fire hazard. Vapors can burn with explosive violence.

1267

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid



### PERSONAL PROTECTIVE CLOTHING AND EQUIPEMENT

**Protective Clothing Required:** Equipment should prevent repeated or prolonged skin contact and any reasonable probability of eye contact with the spilled product. This may include rubber boots, gloves, face shields, splash-proof safety goggles, and other impervious and resistant clothing. Compatible materials may include neoprene, nitrile rubber, chlorinated polyethylene, polyurethane, polyvinyl alcohol, Viton®, and nitrile-butadiene rubber.

**Respiratory Protection:** For unknown concentrations, fire fighting, or high concentrations, a self-contained breathing apparatus (SCBA) with full facepiece. For lesser concentrations, an air purifying respirator (APR) with organic vapor cartridge with a full facepiece within the use limitations of these devices.

### FIRST AID

**Nonspecific Symptoms:** Irritation of the eyes, skin, or respiratory tract; other symptoms of exposure.

**First Aid for Inhalation:** Remove victim to fresh air and keep warm and at rest. If breathing becomes difficult or if breathing has stopped, administer artificial respiration. Get medical attention immediately. (Caution: Administration of mouth-to-mouth resuscitation may expose the first aid provider to chemical within the victim's lungs or vomit.)

**First Aid for Skin Contact:** In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids apart in order to rinse entire surface of eye and lids with water. Provide supportive care and seek immediate medical assistance by a physician from the nearest medical treatment facility.

**First Aid for Eye Contact:** Remove all contaminated clothing. Wash affected body areas with large amounts of water. Decontaminate the patient thoroughly before transporting to a medical treatment facility to prevent the potential for secondary contamination.

**First Aid for Ingestion:** Do not induce vomiting. Keep victim warm and at rest. Get medical attention immediately.

**Note to Physician:** Hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

### FIRE RESPONSE

**Extinguishing Agents:** Carbon dioxide, dry chemical, foam, or water spray. Water may be ineffective and there is some possibility that foam or water may cause some frothing.

**Extinguishing Techniques:** Stay upwind. Wear breathing apparatus and appropriate protective clothing. Move container from fire area if no risk. Do not extinguish burning cargo unless flow can be stopped safely. Be alert to container rupture potential. Stay away from ends of tank involved in fire but realize that shrapnel may travel in any direction. Use water from side and from safe distance to keep fire exposed containers cool. For massive fire in cargo area, use unmanned hose holder or monitor nozzles. Withdraw immediately in case of rising sound from venting safety device or discoloration of tank.

Note: Crude oil fires may produce a highly dangerous phenomenon known as a BOILOVER, whereby light hydrocarbons burn off at the surface of the fire and heavy superheated hydrocarbons sink to the bottom and come in contact with water bottoms. The super heated product converts the water to steam and forces burning crude oil out of the tank. Burning crude oil which has accumulated in tanks or diked areas are susceptible to boilovers. Seek expert advice on how to fight a crude oil fire.

### SPILL RESPONSES

**General Information:** Proceed with caution. Restrict access to area. Keep unprotected personnel upwind of spill area.

Eliminate ignition sources. Prevent liquid from entering sewers and confined spaces. Protect sewers and waterways from contaminated runoff. Notify proper authorities, downstream sewer and water treatment operations, and other downstream users of potentially contaminated water. Note that intake of petroleum crude oil may result in rupture or explosion of boilers or industrial process equipment. Use intrinsically safe equipment where necessary. Choose equipment, where possible, that is not corroded or otherwise damaged by the spilled product. Take the specific flammability hazard and possible volatility of the spilled product into account while planning the response.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### AIR RELEASE

#### TECHNIQUE

MONITOR THE SITUATION . . . The product may not produce large amounts of hazardous airborne contaminants in many outdoor spill situations. It may be advisable in some cases to simply monitor the situation until the spilled product is removed by product and container specialists.

#### CONSEQUENCE

Hazardous levels of product in air may be found in the local spill area and immediately downwind.

#### MITIGATION

Remove the spilled product as soon as possible. Restrict access to the local spill area and areas immediately downwind by unprotected personnel.

#### TECHNIQUE

WATER FOG OR SPRAY . . . Water fog or spray applied to petroleum crude oil vapors or fumes may accelerate their dispersal in the atmosphere. (Note: There is some possibility that water may cause frothing.)

#### CONSEQUENCE

Increases in spill surface area and atmospheric conditions may increase the rate of vapor generation. In enclosed areas, runoff may add to spill volume and overflow impoundments. Water runoff may contain a small amount (if any) of petroleum crude oil from contact with airborne vapors or fumes.

#### MITIGATION

Contain contaminated water and remove or treat as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may add to spill volume and overflow impoundments.

#### TECHNIQUE

FOAM . . . Firefighting foam applied to the surface of liquid pools may slow the release of petroleum crude oil vapors into the atmosphere. (Note: There is some possibility that foam may cause frothing.)

#### CONSEQUENCE

The effects of the foam may be short term. As the foam breaks down, release of vapors will increase. Products of foam breakdown will add to the volume of spilled material.

#### MITIGATION

Continue foam applications until spilled product is removed. Contain foam runoff and treat as hazardous waste.

### LAND SPILL

#### TECHNIQUE

CONFINEMENT DIKES . . . Petroleum crude oil may be confined by building dikes using soil, sand or other materials.

#### CONSEQUENCE

Confined petroleum crude oil may percolate into soil or seep through dike material. This may result in loss of confined product and spread of contamination.

#### MITIGATION

Remove or neutralize contained product as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may overflow impoundments. Where possible, line collection area with compatible impervious materials.

#### TECHNIQUE

EXCAVATION . . . Spills of material may be confined by building trenches or ditches.

#### CONSEQUENCE

Material may leach into soil. Deep excavations may increase the potential for groundwater contamination in some areas. This may result in loss of confined product and spread of contamination.

#### MITIGATION

Remove material from contaminated area as quickly as possible to prevent possible contamination beyond the spill area. Water sprays may be used to reduce vapors, except in enclosed areas where runoff may accumulate and overflow impoundments. Be alert to condition such as increasing spill volume with runoff or rain water which may overflow diked areas. If possible, confinement areas should be lined with suitable, impervious material to prevent penetration into soil.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### **TECHNIQUE**

**PUMPING/VACUUM SUCTION** . . . Spilled material confined in diked areas may be recovered using compatible hoses, pumps and vacuum trucks. All product transfer equipment should be properly bonded and grounded.

### **CONSEQUENCE**

Equipment that is not compatible with the spilled product may become damaged and present a safety hazard for response personnel. Mechanical equipment will become contaminated with removed product.

### **MITIGATION**

Use equipment constructed of materials compatible with the spilled product. Decontaminate equipment.

### **TECHNIQUE**

**ABSORPTION** . . . Spreading of spilled product may be controlled by absorbing liquid with sand, earth, clay, fly ash, cement powder, peat moss, saw dust, straw, commercial sorbents, or other compatible substances.

### **CONSEQUENCE**

Once used, sorbent materials pose the same hazards as the spilled product. Their use adds to the overall volume of contaminated material.

### **MITIGATION**

Deplete accumulated liquid pools with pumps or vacuum trucks if possible before applying sorbents. Remove contaminated sorbents to safe storage by mechanical means.

### **TECHNIQUE**

**MECHANICAL REMOVAL** . . . Soil contaminated with spilled material may be removed by shovels, as well as a variety of heavy equipment such as backhoes and loaders.

### **CONSEQUENCE**

Mechanical equipment used in clean-up operations may become contaminated and present a safety and/or health hazard to response personnel. Any flammable vapors present in the area may be ignited by motorized removal equipment.

### **MITIGATION**

Use equipment constructed of materials compatible with the spilled product. Decontaminate equipment. Continually monitor for presence of flammable vapors.

## **WATER SPILL**

### **TECHNIQUE**

**STOP USE** . . . Notify downstream industrial, municipal and public users to stop water intake or to monitor water for contamination.

### **CONSEQUENCE**

Alternative water supplies may be needed to be established. Consult environmental specialists for assistance, as needed.

### **MITIGATION**

Provide alternative water supplies as needed until water supply is declared safe.

### **TECHNIQUE**

**FLOATING BOOMS/BARRIERS** . . . Oil spill confinement booms of compatible material may be deployed. Alternatively, mesh or nets may be strung across stream and anchored every 6-8 feet. Straw or peat placed on upstream side of mesh should absorb and retard spreading of spilled product.

### **CONSEQUENCE**

Leakage may occur under or through barrier if high waves or current present or if not properly deployed. Incompatible materials may be damaged by spilled product. Booms, barrier materials, and deployment equipment may be contaminated. Fire hazards pose risk to response personnel and equipment.

### **MITIGATION**

Proceed with caution. Stage barriers in series where necessary. Recover spilled product as soon as possible. Decontaminate equipment after use. Dispose of waste materials in proper and safe manner. Use compatible equipment. Eliminate ignition sources.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### **TECHNIQUE**

**WATER UNDER-FLOW DAMS . . .** Streams may be provided with an under-flow dam. This is a dam made of compacted earth, clay, or other material with open tubes or pipes passing through under water. Upstream ends of pipes or tubes should be well below the layer of floating contaminant. Downstream ends should be at a higher elevation but still below the floating layer. Valves may be installed on downstream ends to control water flow.

### **CONSEQUENCE**

Earthen dams may become saturated with water and seep through or collapse. An insufficient number of under-flow tubes or pipes or additional water may cause overflow.

### **MITIGATION**

Use sufficient number and capacity of tubes or pipes. Be alert for conditions that may lead to overflow, saturation or dam collapse. Remove spilled product as soon as possible.

### **TECHNIQUE**

**DIVERSION . . .** Where other means are unavailable, floating slicks may be temporarily herded, diverted, or controlled using water hose streams, small boat propeller wash or chemical surface tension modifiers known as spill herders.

### **CONSEQUENCE**

Hose streams and propeller washes have limited applicability and effectiveness. The latter may cause undesired mixing of spilled product and water due to extreme agitation. Chemical spill herders should not be used until approval is obtained from authorized environmental officials.

### **MITIGATION**

Use other means if available.

### **TECHNIQUE**

**SURFACE SKIMMING . . .** Oil spill skimming devices may be deployed to recover floating petroleum crude oil.

### **CONSEQUENCE**

Incompatible equipment may be damaged. Equipment may be contaminated and pose hazard to future users. Fire hazard may pose risk to response personnel and equipment.

### **MITIGATION**

Decontaminate equipment after use. Use compatible equipment. Store recovered product in safe and secure location. Eliminate ignition sources.

### **TECHNIQUE**

**ABSORPTION . . .** Straw, hay, peat, or commercial sorbent materials compatible with petroleum crude oil may be used to absorb spilled product from the water surface, preferably after the spill has been confined.

### **CONSEQUENCE**

Once used, sorbent materials pose the same hazards as the spilled product. Their use adds to the overall volume of contaminated material. Deployment and recovery can be difficult. Fire hazards pose risk to response personnel and equipment.

### **MITIGATION**

Deplete accumulated liquid pools with pumps or vacuum trucks if possible before applying sorbents. Decontaminate equipment after use. Store and dispose of waste materials in proper and safe manner. Use compatible equipment. Eliminate ignition sources.

**Attachment 2B**  
**DOT-OST-2014-0067**  
**Emergency Response Information**  
**Source: AAR**

---

PETROLEUM CRUDE OIL  
CLASS 3 (FLAMMABLE LIQUID)

4910191  
UN1267

PETROLEUM CRUDE OIL IS A DARK VISCOUS LIQUID. IT HAS A FLASH POINT OF LESS THAN 141 DEG. F. IT IS LIGHTER THAN WATER AND INSOLUBLE IN WATER. ITS VAPORS ARE HEAVIER THAN AIR.

IF MATERIAL ON FIRE OR INVOLVED IN FIRE  
DO NOT EXTINGUISH FIRE UNLESS FLOW CAN BE STOPPED  
USE WATER IN FLOODING QUANTITIES AS FOG  
SOLID STREAMS OF WATER MAY SPREAD FIRE  
COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER  
APPLY WATER FROM AS FAR A DISTANCE AS POSSIBLE  
USE FOAM, DRY CHEMICAL, OR CARBON DIOXIDE

IF MATERIAL NOT ON FIRE OR NOT INVOLVED IN FIRE  
KEEP SPARKS, FLAMES, AND OTHER SOURCES OF IGNITION AWAY  
KEEP MATERIAL OUT OF WATER SOURCES AND SEWERS  
BUILD DIKES TO CONTAIN FLOW AS NECESSARY  
ATTEMPT TO STOP LEAK IF WITHOUT UNDUE PERSONNEL HAZARD  
USE WATER SPRAY TO KNOCK-DOWN VAPORS

PERSONNEL PROTECTION  
AVOID BREATHING VAPORS  
KEEP UPWIND  
WEAR APPROPRIATE CHEMICAL PROTECTIVE GLOVES, BOOTS AND GOGGLES  
DO NOT HANDLE BROKEN PACKAGES UNLESS WEARING  
APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT  
WASH AWAY ANY MATERIAL WHICH MAY HAVE CONTACTED THE BODY  
WITH COPIOUS AMOUNTS OF WATER OR SOAP AND WATER

ENVIRONMENTAL CONSIDERATIONS - LAND SPILL  
DIG A PIT, POND, LAGOON, HOLDING AREA  
TO CONTAIN LIQUID OR SOLID MATERIAL  
DIKE SURFACE FLOW USING SOIL, SAND BAGS,  
FOAMED POLYURETHANE, OR FOAMED CONCRETE  
ABSORB BULK LIQUID WITH FLY ASH, CEMENT POWDER,  
OR COMMERCIAL SORBENTS

---

ENVIRONMENTAL CONSIDERATIONS - WATER SPILL  
USE NATURAL BARRIERS OR OIL SPILL CONTROL BOOMS TO LIMIT SPILL TRAVEL  
REMOVE TRAPPED MATERIAL WITH SUCTION HOSES

ENVIRONMENTAL CONSIDERATIONS - AIR SPILL  
APPLY WATER SPRAY OR MIST TO KNOCK DOWN VAPORS

FIRST AID RESPONSES  
MOVE VICTIM TO FRESH AIR; CALL EMERGENCY MEDICAL CARE.  
IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION.  
IF BREATHING IS DIFFICULT, GIVE OXYGEN.  
IN CASE OF CONTACT WITH MATERIAL, IMMEDIATELY FLUSH SKIN OR EYES WITH  
RUNNING WATER FOR AT LEAST 20 MINUTES.  
REMOVE AND ISOLATE CONTAMINATED CLOTHING AND SHOES AT THE SITE.

ERG2012 FLAMMABLE LIQUIDS (NON-POLAR/WATER-IMMISCIBLE) **GUIDE 128**

---

**EMERGENCY RESPONSE**

**FIRE**  
**CAUTION:** All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.  
**CAUTION:** For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

**Small Fire**

- Dry chemical, CO<sub>2</sub>, water spray or regular foam.

**Large Fire**

- Water spray, fog or regular foam.
- Do not use straight streams.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

**SPILL OR LEAK**

- ELIMINATE all ignition sources (no smoking, flames, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

**Large Spill**

- Dike for ahead of liquid spill for later disposal.
- Water spray may reduce vapor, but may not prevent ignition in closed spaces.

**FIRST AID**

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Page 195

ERG2012 FLAMMABLE LIQUIDS (NON-POLAR/WATER-IMMISCIBLE) **GUIDE 128**

---

**POTENTIAL HAZARDS**

**FIRE OR EXPLOSION**

- **HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- For UN3168, if Lithium ion batteries are involved, also consult GUIDE 147.
- **If molten aluminum is involved, refer to GUIDE 169.**

**HEALTH**

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

**PUBLIC SAFETY**

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first, if Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

**PROTECTIVE CLOTHING**

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

**EVACUATION**

**Large Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Page 194



**CONFIDENTIALITY NOTICE:** This communication with its contents may contain confidential and/or legally privileged information. It is solely for the use of the intended recipient(s). Unauthorized interception, review, use or disclosure is prohibited and may violate applicable laws. If you are not the intended recipient, please contact the sender and destroy all copies of the communication.

June 3, 2014

Mr. Bob McGrath, SERC Chair  
c/o Ms. Trish Kindt  
SERC – Dept. of the Environment & Natural Resources  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

Via email : [Trish.Kindt@state.sd.us](mailto:Trish.Kindt@state.sd.us)

**Attention: Mr. Bob McGrath**

The enclosed notification is provided in accordance with the United States Department of Transportation Emergency Restriction/Prohibition Order dated May 7, 2014, Docket No. DOT-OST-2014-0067 (Order). By accepting this notification the recipient agrees and acknowledges, on behalf of the above referenced State Emergency Response Commission, that all information provided by Canadian Pacific (CP) or its affiliates, pursuant to this Order is confidential and should not be disclosed without specific authorization, other than as authorized below. For further certainty, the recipient acknowledges that the above mentioned information is proprietary in nature and not in the public domain.

The recipient acknowledges that he/she shall (i) use the information only for emergency planning or response; (ii) disclose the information only to those persons with a need-to-know for the purposes referred to in (i); and (iii) keep and safeguard the information in a strictly confidential manner and ensure that any person or organization to whom the recipient discloses the information is first informed of the confidentiality provisions and obligations contained herein and keeps it confidential, to the maximum extent permitted by law. Moreover, the recipient agrees not to reproduce or copy either in whole or in part the information except as specifically authorized by CP and any authorized copies, reproductions, or excerpts shall include a notice of confidentiality on the first page.

Further, the recipient agrees and acknowledges that any violation of the above commitments poses significant security risks, which risks are not fully or adequately compensable by money damages, and as such an application to a court of competent jurisdiction for an immediate injunction is an appropriate remedy.

CP will provide an updated notification if there is a material change, as defined in the Order.

The undersigned is the appropriate point of contact for the purposes of this Order.

Sincerely,

Darlene Nagy  
HazMat Program Manager  
Canadian Pacific Railway Company  
[Darlene\\_Nagy@cpr.ca](mailto:Darlene_Nagy@cpr.ca) Phone: 403-319-6148 Fax:403-319-3883

**For Incidents / Emergencies involving CP Track or Equipment call  
CP POLICE COMMUNICATION CENTRE AT 1 800 716 9132 (24 Hours)**



**Table 1.** Summary of the Average Number of Trains per week and the Typical Range in the Number of Trains per Week in the Counties in the State of South Dakota

**UN Number: 1267**  
**Proper Shipping Name: Petroleum Crude Oil**  
**Class 3 Packing Groups I & II**

*CONFIDENTIAL INFORMATION*  
*Railroad Restricted Information*

Bakken Crude through the State of South Dakota		
County	Average Trains per Week	Number of Trains per week (Range)
Sully	0	0
Hughes	0	0
Hyde	0	0
Hand	0	0
Beadle	0	0
Kingsbury	0	0
Brookings	0	0



**Figure 1.** CP Routing through the State of South Dakota

**Link to CP's Interactive Map:** <http://www.cpr.ca/en/our-network-and-facilities/Pages/default.aspx>

The information provided is to be used solely for and by bona fide emergency planning and response organizations for the expressed purpose of emergency and contingency planning. This information will not be distributed publicly in whole or in part without the express written permission of CP.



Emergency Response Information as required by 49 CFR part 172, subpart C: Proper Shipping Name: Petroleum Crude Oil, UN Number 1267, Class 3 Packing Groups I & II

Emergency response Information as required by 49 CFR part 172, subpart G:

## **GUIDE 128 FLAMMABLE LIQUIDS (Non-Polar / Water-Immiscible)**

### **POTENTIAL HAZARDS**

#### **FIRE OR EXPLOSION**

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **(P)** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- For UN3166, if Lithium ion batteries are involved, also consult GUIDE 147.
- **If molten aluminum is involved, refer to GUIDE 169.**

#### **HEALTH**

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

### **PUBLIC SAFETY**

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

#### **PROTECTIVE CLOTHING**

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

#### **EVACUATION**

##### **Large Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

##### **Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.



## EMERGENCY RESPONSE

### **FIRE**

**CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.**

**CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.**

#### **Small Fire**

- Dry chemical, CO<sub>2</sub>, water spray or regular foam.

#### **Large Fire**

- Water spray, fog or regular foam.
- **Do not use straight streams.**
- Move containers from fire area if you can do it without risk.

#### **Fire Involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### **SPILL OR LEAK**

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

#### **Large Spill**

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

### **FIRST AID**

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.



## PETROLEUM CRUDE OIL Class 3 (Flammable Liquid) or Combustible Liquid

September 2000

### GENERAL INFORMATION

Petroleum crude oil is a flammable, variably light to dark colored liquid hydrocarbon with properties between gasoline and kerosene. It is used as a raw material for making fuels and various chemicals. Barely soluble in water and slightly lighter, petroleum crude oil will form a floating surface slick. Flammability of this product can vary widely having a flash point range from -45 to 392°F. The liquid may evaporate easily even at low temperatures. The vapors of the more volatile, and therefore more flammable crude oil, are heavier than air, may accumulate and persist in low areas, and may travel some distance to a source of ignition and flash back. Similarly, accumulations of vapor in confined spaces such as buildings or sewers may explode if ignited and there is some potential that containers of liquid may rupture violently if exposed to fire or excessive heat for sufficient time duration. Typical crude oil weigh approximately 6.3-8.3 pounds per gallon.

Petroleum crude oil will not react with water or other common materials and is stable in normal transportation. It is incompatible with strong oxidizers, and may attack some forms of plastics, rubber, and coatings. Toxicity by potential routes of exposure is generally considered low to moderate. The more volatile mixtures may be present in air in high concentrations creating an inhalation hazard. There is also the possibility that the crude oil may contain some fraction of toxic **benzene** or **hydrogen sulfide** (see separate guides). Products of combustion may include toxic constituents.

### CHEMICAL/PHYSICAL DATA

**Solubility in Water:** Practically insoluble, below 0.1%

**Solubility in Other Chemicals:** Soluble in various hydrocarbon liquids.

**Specific Gravity (Liquid):** Varies, 0.75 - 0.99

**Vapor Density:** 3.4 (approximately)

**Boiling Point:** Varies, 1000+°F (538+°C).

**Melting Point:** Unavailable

**Freezing Point:** Unavailable

**Molecular Weight:** Complex mixture, approximately 99

**Heat of Combustion:** 10,290 - 10,460 cal/g (Petroleum distillates)

**Evaporation Rate (butyl acetate=1):** 10 (approximately)

**Vapor Pressure:** Varies widely with composition, 40 mmHg for petroleum distillates.

**Flash Point:** Varies widely -45 to 392°F (-43 to 200°C)

**Autoignition Temperature:** 450 - 500°F (232 - 260°C)

**Burning Rate:** 4 mm/minute

**Flammable Limits:** 0.4% (LEL) - 15% (UEL)

**Stability:** Stable

**Polymerization Potential:** Will not occur.

**Corrosiveness:** Relatively noncorrosive but may attack some forms of plastics, rubber, and coatings.

**Reactivity with Water:** No reaction

**Reactivity and Incompatibility:** Reacts with strong oxidizing materials. Avoid chlorine, fluorine.

### IDENTIFICATION

**Shipping Name(s):** Petroleum crude oil (USDOT & IMO).

**Synonyms and Tradenames:** Crude oil ; Mineral oil; Rock oil; Coal oil; Petroleum.

**CAS Registry No.:** 8002-05-9

**Chemical Formula:** C<sub>6</sub>-C<sub>13</sub> hydrocarbon mixture. Crude oil is a naturally occurring complex mixture of hydrocarbons whose exact composition and physical properties can vary widely depending upon its source.

**Constituent Components (% each):** Complex mixture of petroleum hydrocarbons; may contain 0-10% benzene.

**UN/NA Designation:** UN1267

**IMO Designation:** 3.1, 3.2 or 3.3, Flammable liquids

**NFPA 704 Hazard Rating:** 2(Health): 3(Flammability): 0(Reactivity)

**Physical Form as Shipped:** Liquid

**Physical Form as Released:** Liquid

**Color of the Shipped Material:** Dark yellow to brown or greenish-black, oily liquid.

**Odor Characteristics:** Like gasoline and kerosene

**Reportable Quantity:** See **appendix I**.

**Common Uses:** Raw material for making fuels and various chemicals.

**ADDITIONAL INFORMATION AND ASSISTANCE: FOR 24-HOUR TECHNICAL SUPPORT FOR ACCIDENTS INVOLVING SPILLS, LEAKS, FIRES OR EXPOSURES TO CHEMICALS, CONTACT CHEMTREC AT (800) 424-9300 OR (703) 527-3887 (COLLECT).**

	<h2 style="margin: 0;">PETROLEUM CRUDE OIL</h2> <h3 style="margin: 0;">Class 3 (Flammable Liquid) or Combustible Liquid</h3>	
or		or
		

## POTENTIAL HAZARDS

### GENERAL HAZARDS

**Threshold Odor Concentration:** Varies

**Unusual Hazards:** Properties uncertain. Vapors of some crude oil may be heavier than air and may travel to a source of ignition. Some may include significant amounts of **benzene** (see separate guide).

**Short Term Exposure Limit (STEL):** Unavailable

**Time Weighted Average (TLV-TWA):** 86 ppm (350 mg/m<sup>3</sup>) (Petroleum distillates).

**Ceiling (C) Limit:** 444 ppm (1800 mg/m<sup>3</sup>) (Petroleum distillates).

**IDLH:** 1100 ppm or 10% LEL (Petroleum distillates).

**Conditions to Avoid:** Heat, fire, or sparks; contact with incompatible materials; runoff to sewers or water bodies; inhalation, ingestion, or direct physical contact.

### HEALTH HAZARDS

**Public Health Hazards:** Major hazard is from inhalation of high vapor concentrations in air. Ingestion and direct contact are also to be avoided. (Note: Any benzene in the product increases both acute and chronic health risks.)

**Hazards of Skin or Eye Contact:** Repeated or prolonged contact with liquid petroleum crude oil may cause drying, cracking, and inflammation of the skin due to the defatting action of the product. Contact with the eyes may result in irritation and possibly temporary corneal injury.

**Hazards of Inhalation:** Vapors of petroleum crude oil may be irritating to the eyes and the upper respiratory tract. High concentrations in air may result in narcosis and central nervous system depression with symptoms including inebriation, headache, nausea, dizziness, drowsiness, unconsciousness, convulsions, and possibly death. Some symptoms may be evident after 1 hour at 4000-7000 ppm in air. Acute overexposure may also result in persistent anorexia and nervousness on occasion.

**Hazards of Ingestion:** Ingestion may cause a burning sensation, vomiting, diarrhea, drowsiness, and symptoms listed above.

Aspiration into the lungs during vomiting may result in pulmonary edema with possibly severe consequences.

### FIRE HAZARDS

**Lower Flammable Limit:** 0.4%

**Upper Flammable Limit:** 15%

**Behavior in Fire:** Flammable liquid. Liquid will burn but may be difficult to ignite depending on constituents.

Flammable liquids may generate large quantities of flammable vapor upon release. Vapors of flammable liquids are heavier than air, may accumulate and persist in low areas, and may travel to a source of ignition and flash back. There is some potential that containers may rupture violently in fire.

**Hazardous Decomposition Products:** Not well-defined, may include toxic constituents such as carbon monoxide, carbon dioxide, oxides of sulfur and reactive hydrocarbons.

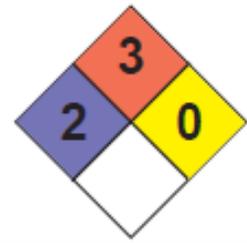
### EXPLOSION HAZARDS

**Explosive Potential:** Explosion may result if vapors are ignited in a confined area. There is some potential that containers may rupture violently in fire. Product is sensitive to static discharge and is an extreme fire hazard. Vapors can burn with explosive violence.



1267

**PETROLEUM CRUDE OIL**  
Class 3 (Flammable Liquid) or  
Combustible Liquid



**PERSONAL PROTECTIVE CLOTHING AND EQUIPEMENT**

**Protective Clothing Required:** Equipment should prevent repeated or prolonged skin contact and any reasonable probability of eye contact with the spilled product. This may include rubber boots, gloves, face shields, splash-proof safety goggles, and other impervious and resistant clothing. Compatible materials may include neoprene, nitrile rubber, chlorinated polyethylene, polyurethane, polyvinyl alcohol, Viton®, and nitrile-butadiene rubber.

**Respiratory Protection:** For unknown concentrations, fire fighting, or high concentrations, a self-contained breathing apparatus (SCBA) with full facepiece. For lesser concentrations, an air purifying respirator (APR) with organic vapor cartridge with a full facepiece within the use limitations of these devices.

**FIRST AID**

**Nonspecific Symptoms:** Irritation of the eyes, skin, or respiratory tract; other symptoms of exposure.

**First Aid for Inhalation:** Remove victim to fresh air and keep warm and at rest. If breathing becomes difficult or if breathing has stopped, administer artificial respiration. Get medical attention immediately. (Caution: Administration of mouth-to-mouth resuscitation may expose the first aid provider to chemical within the victim's lungs or vomit.)

**First Aid for Skin Contact:** In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids apart in order to rinse entire surface of eye and lids with water. Provide supportive care and seek immediate medical assistance by a physician from the nearest medical treatment facility.

**First Aid for Eye Contact:** Remove all contaminated clothing. Wash affected body areas with large amounts of water. Decontaminate the patient thoroughly before transporting to a medical treatment facility to prevent the potential for secondary contamination.

**First Aid for Ingestion:** Do not induce vomiting. Keep victim warm and at rest. Get medical attention immediately.

**Note to Physician:** Hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

**FIRE RESPONSE**

**Extinguishing Agents:** Carbon dioxide, dry chemical, foam, or water spray. Water may be ineffective and there is some possibility that foam or water may cause some frothing.

**Extinguishing Techniques:** Stay upwind. Wear breathing apparatus and appropriate protective clothing. Move container from fire area if no risk. Do not extinguish burning cargo unless flow can be stopped safely. Be alert to container rupture potential. Stay away from ends of tank involved in fire but realize that shrapnel may travel in any direction. Use water from side and from safe distance to keep fire exposed containers cool. For massive fire in cargo area, use unmanned hose holder or monitor nozzles. Withdraw immediately in case of rising sound from venting safety device or discoloration of tank.

Note: Crude oil fires may produce a highly dangerous phenomenon known as a BOILOVER, whereby light hydrocarbons burn off at the surface of the fire and heavy superheated hydrocarbons sink to the bottom and come in contact with water bottoms. The super heated product converts the water to steam and forces burning crude oil out of the tank. Burning crude oil which has accumulated in tanks or diked areas are susceptible to boilovers. Seek expert advice

**SPILL RESPONSES**

**General Information:** Proceed with caution. Restrict access to area. Keep unprotected personnel upwind of spill area. Eliminate ignition sources. Prevent liquid from entering sewers and confined spaces. Protect sewers and waterways from contaminated runoff. Notify proper authorities, downstream sewer and water treatment operations, and other downstream users of potentially contaminated water. Note that intake of petroleum crude oil may result in rupture or explosion of boilers or industrial process equipment. Use intrinsically safe equipment where necessary. Choose equipment, where possible, that is not corroded or otherwise damaged by the spilled product. Take the specific flammability hazard and possible volatility of the spilled product into account while planning the response.



## PETROLEUM CRUDE OIL

### Class 3 (Flammable Liquid) or Combustible Liquid

#### **AIR RELEASE**

##### **TECHNIQUE**

MONITOR THE SITUATION . . . The product may not produce large amounts of hazardous airborne contaminants in many outdoor spill situations. It may be advisable in some cases to simply monitor the situation until the spilled product is removed by product and container specialists.

##### **CONSEQUENCE**

Hazardous levels of product in air may be found in the local spill area and immediately downwind.

##### **MITIGATION**

Remove the spilled product as soon as possible. Restrict access to the local spill area and areas immediately downwind by unprotected personnel.

##### **TECHNIQUE**

WATER FOG OR SPRAY . . . Water fog or spray applied to petroleum crude oil vapors or fumes may accelerate their dispersal in the atmosphere. (Note: There is some possibility that water may cause frothing.)

##### **CONSEQUENCE**

Increases in spill surface area and atmospheric conditions may increase the rate of vapor generation. In enclosed areas, runoff may add to spill volume and overflow impoundments. Water runoff may contain a small amount (if any) of petroleum crude oil from contact with airborne vapors or fumes.

##### **MITIGATION**

Contain contaminated water and remove or treat as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may add to spill volume and overflow impoundments.

##### **TECHNIQUE**

FOAM . . . Firefighting foam applied to the surface of liquid pools may slow the release of petroleum crude oil vapors into the atmosphere. (Note: There is some possibility that foam may cause frothing.)

##### **CONSEQUENCE**

The effects of the foam may be short term. As the foam breaks down, release of vapors will increase. Products of foam breakdown will add to the volume of spilled material.

##### **MITIGATION**

Continue foam applications until spilled product is removed. Contain foam runoff and treat as hazardous waste.

#### **LAND SPILL**

##### **TECHNIQUE**

CONFINEMENT DIKES . . . Petroleum crude oil may be confined by building dikes using soil, sand or other materials.

##### **CONSEQUENCE**

Confined petroleum crude oil may percolate into soil or seep through dike material. This may result in loss of confined product and spread of contamination.

##### **MITIGATION**

Remove or neutralize contained product as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may overflow impoundments. Where possible, line collection area with compatible impervious materials.

##### **TECHNIQUE**

EXCAVATION . . . Spills of material may be confined by building trenches or ditches.

##### **CONSEQUENCE**

Material may leach into soil. Deep excavations may increase the potential for groundwater contamination if some areas. This may result in loss of confined product and spread of contamination.

##### **MITIGATION**

Remove material from contaminated area as quickly as possible to prevent possible contamination beyond the spill area. Water sprays may be used to reduce vapors, except in enclosed areas where runoff may accumulate and overflow impoundments. Be alert to condition such as increasing spill volume with runoff or rain water which may overflow diked areas. If possible, confinement areas should be lined with suitable, impervious material to prevent penetration into soil.



## PETROLEUM CRUDE OIL

### *Class 3 (Flammable Liquid) or Combustible Liquid*

#### **TECHNIQUE**

**WATER UNDER-FLOW DAMS** . . . Streams may be provided with an under-flow dam. This is a dam made of compacted earth, clay, or other material with open tubes or pipes passing through under water. Upstream ends of pipes or tubes should be well below the layer of floating contaminant. Downstream ends should be at a higher elevation but still below the floating layer. Valves may be installed on downstream ends to control water flow.

#### **CONSEQUENCE**

Earthen dams may become saturated with water and seep through or collapse. An insufficient number of under-flow tubes or pipes or additional water may cause overflow.

#### **MITIGATION**

Use sufficient number and capacity of tubes or pipes. Be alert for conditions that may lead to overflow, saturation or dam collapse. Remove spilled product as soon as possible.

#### **TECHNIQUE**

**DIVERSION** . . . Where other means are unavailable, floating slicks may be temporarily herded, diverted, or controlled using water hose streams, small boat propeller wash or chemical surface tension modifiers known as spill herders.

#### **CONSEQUENCE**

Hose streams and propeller washes have limited applicability and effectiveness. The latter may cause undesired mixing of spilled product and water due to extreme agitation. Chemical spill herders should not be used until approval is obtained from authorized environmental officials.

#### **MITIGATION**

Use other means if available.

#### **TECHNIQUE**

**SURFACE SKIMMING** . . . Oil spill skimming devices may be deployed to recover floating petroleum crude oil.

#### **CONSEQUENCE**

Incompatible equipment may be damaged. Equipment may be contaminated and pose hazard to future users. Fire hazard may pose risk to response personnel and equipment.

#### **MITIGATION**

Decontaminate equipment after use. Use compatible equipment. Store recovered product in safe and secure location. Eliminate ignition sources.

#### **TECHNIQUE**

**ABSORPTION** . . . Straw, hay, peat, or commercial sorbent materials compatible with petroleum crude oil may be used to absorb spilled product from the water surface, preferably after the spill has been confined.

#### **CONSEQUENCE**

Once used, sorbent materials pose the same hazards as the spilled product. Their use adds to the overall volume of contaminated material. Deployment and recovery can be difficult. Fire hazards pose risk to response personnel and equipment.

#### **MITIGATION**

Deplete accumulated liquid pools with pumps or vacuum trucks if possible before applying sorbents. Decontaminate equipment after use. Store and dispose of waste materials in proper and safe manner. Use compatible equipment. Eliminate ignition sources.



**AAR Guide to Emergency Handling of Hazardous Materials in Surface Transportation:**

IN THE EVENT OF ACCIDENT THESE INSTRUCTIONS MUST PROMPTLY  
BE MADE AVAILABLE TO EMERGENCY, FIRE OR POLICE PERSONNEL

PETROLEUM CRUDE OIL 4910165  
CLASS 3 (FLAMMABLE LIQUID) UN1267

PETROLEUM CRUDE OIL IS A DARK VISCOUS LIQUID. IT HAS A FLASH POINT OF LESS THAN 141 DEG. F. IT IS LIGHTER THAN WATER AND INSOLUBLE IN WATER. ITS VAPORS ARE HEAVIER THAN AIR.

ENVIRONMENTAL CONSIDERATIONS - AIR SPILL  
APPLY WATER SPRAY OR MIST TO KNOCK DOWN VAPORS

IF MATERIAL ON FIRE OR INVOLVED IN FIRE  
DO NOT EXTINGUISH FIRE UNLESS FLOW CAN BE STOPPED  
USE WATER IN FLOODING QUANTITIES AS FOG  
SOLID STREAMS OF WATER MAY SPREAD FIRE  
COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER  
APPLY WATER FROM AS FAR A DISTANCE AS POSSIBLE  
USE FOAM, DRY CHEMICAL, OR CARBON DIOXIDE

ENVIRONMENTAL CONSIDERATIONS - LAND SPILL  
DIG A PIT, POND, LAGOON, HOLDING AREA  
TO CONTAIN LIQUID OR SOLID MATERIAL  
DIKE SURFACE FLOW USING SOIL, SAND BAGS,  
FOAMED POLYURETHANE, OR FOAMED CONCRETE  
ABSORB BULK LIQUID WITH FLY ASH, CEMENT POWDER,  
OR COMMERCIAL SORBENTS

FIRST AID RESPONSES  
MOVE VICTIM TO FRESH AIR; CALL EMERGENCY MEDICAL CARE.  
IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION.  
IF BREATHING, IS DIFFICULT, GIVE OXYGEN.  
IN CASE OF CONTACT WITH MATERIAL, IMMEDIATELY FLUSH SKIN OR EYES WITH  
RUNNING WATER FOR AT LEAST 15 MINUTES.  
REMOVE AND ISOLATE CONTAMINATED CLOTHING AND SHOES AT THE SITE.

IF MATERIAL NOT ON FIRE AND NOT INVOLVED IN FIRE  
KEEP SPARKS, FLAMES, AND OTHER SOURCES OF IGNITION AWAY  
KEEP MATERIAL OUT OF WATER SOURCES AND SEWERS  
BUILD DIKES TO CONTAIN FLOW AS NECESSARY  
ATTEMPT TO STOP LEAK IF WITHOUT UNDUE PERSONNEL HAZARD  
USE WATER SPRAY TO KNOCK-DOWN VAPORS

PERSONNEL PROTECTION  
AVOID BREATHING VAPORS  
KEEP UPWIND  
WEAR APPROPRIATE CHEMICAL PROTECTIVE GLOVES, BOOTS AND GOGGLES  
DO NOT HANDLE BROKEN PACKAGES UNLESS WEARING  
APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT  
WASH AWAY ANY MATERIAL WHICH MAY HAVE CONTACTED THE BODY  
WITH COPIOUS AMOUNTS OF WATER OR SOAP AND WATER

ENVIRONMENTAL CONSIDERATIONS - WATER SPILL  
USE NATURAL BARRIERS OR OIL SPILL CONTROL BOOMS TO LIMIT SPILL TRAVEL  
REMOVE TRAPPED MATERIAL WITH SUCTION HOSES

**For Incidents / Emergencies involving CP Track or Equipment call  
CP POLICE COMMUNICATION CENTRE AT  
1 800 716 9132 (24 Hours)**

Memorandum

To: SERC  
 From: Bob Van Winsen  
 CC: Cari Leidholt  
 Date: July 15, 2014  
 Re: GY2013 HMEP Grant

Training grant:	Fed Share: <b>\$111,859</b>	Non Federal Share (Match): <b>\$27,965</b>	Total: <b>\$139,824</b>
Planning grant:	Fed Share: <b>\$60,327</b>	Non Federal Share (Match): <b>\$15,082</b>	Total: <b>\$75,409</b>

First Quarter:

Training: Allocated: <b>\$120,162.06</b>	Unallocated: <b>\$96.94</b>
--	-----------------------------

Planning: Allocated: <b>\$25,940</b>	Unallocated: <b>\$34,387</b>
--------------------------------------	------------------------------

Second Quarter

Training: Allocated \$	Unallocated \$
------------------------	----------------

Planning: Allocated \$	Unallocated \$
------------------------	----------------

Third Quarter

Training: Allocated <b>\$129,487.00</b>	Unallocated <b>\$(253.08)</b>
---	-------------------------------

Planning: Allocated <b>\$40,515.00</b>	Unallocated <b>\$19,812.00</b>
--	--------------------------------

Fourth Quarter

Training: Allocated \$	Spent \$	Remaining funds \$
------------------------	----------	--------------------

Planning: Allocated \$	Spent \$	Remaining funds \$
------------------------	----------	--------------------

## GY2013 HMEP activities and goals.

The GY2013 HMEP training grant application was sent to fire chiefs, local emergency managers and EMS personnel throughout the state. The training grant can be used to assist with training first responders in dealing with hazardous materials incidents. The following classes to name a few are listed in the State application:

- Awareness and Operations. Used to train local responders
- EMS Hazardous Material, level 1 and level 2.
- Technician level and above, for State of South Dakota recognized hazardous material teams.

The GY2013 HMEP planning grant application was sent to LEPC chairmen and the local emergency managers. The planning grant is available to assist the local LEPC responsibilities for planning of hazardous materials in your community. Specifically, these funds can be used to:

- Prepare the annual update to the hazardous materials plan required under SARA Title III. The cost of hiring a contractor and all related out of pocket expenses can be covered with this grant. **If the last major plan update was several years ago, each county is encouraged to apply for this grant.**
- Conduct a commodity flow study to determine the hazardous materials flowing through the road/rail system in each jurisdiction. This information can then be used to improve planning for hazmat incidents.
- Conduct hazardous material exercises to better prepare personnel in response to a hazardous materials event.

The application deadline stated is the requested time to get application in to OEM but we will accept applications after this date as long as funds are available and the work is completed and invoiced by the end of the performance period.

The performance period for the HMEP GY2013 grant is October 1, 2013 through September 30, 2014.

### Challenges and Goals:

- Training:

The challenge expending funds due to the consortium the hazmat teams were once utilizing has come to an end. The waiting period for the facilities using FEMA funds has drastically increased. The 4 state hazmat teams have returned to the HMEP grant for assistance. There were more requests than funds this year.

The lack of qualified instructors to go out and teach the awareness and operations classes has been alleviated by a list of instructors furnished by the State Fire Marshal's office. These instructors maintain certification with the Fire Marshal.

Create an operations level hazmat class the smaller rural VFD's can implement to train to a higher level due to the increase in oil field related traffic. Recognizing the limited amount of time these responders have to attend a class room, an 8 hour operations course designed for the smaller VFD with limited equipment is being developed.

Standardize requirements for instructors teaching classes for the HMEP program. This would maintain a level of uniformity across the State of South Dakota. Along with this a certification program would be easier to put in place which is becoming the focus.

- Planning

The focus of the planning grant now that the statewide commodity flow has been completed is updating or creating a hazmat plan for each county. The HMEP grant holders have expressed an interest in this due to the increase incidents involving the increasing number of rail cars loaded with oil. The challenges have been continuity in the plans submitted to the State of South Dakota. The existing template that was created some time ago has been revised. The revision allows the template to be more easily filled out electronically. The new template was announced in the OEM monthly briefing. A copy was also sent to all county EM's and planning districts in the State of South Dakota.

Work has been ongoing with the Local Planning Districts, also known as Continuity of Governments. The new hazmat plan template was sent to each of the six districts. Requests from county EM's for information regarding updating or creating their hazmat plan has seen an increase. The planning district information is also given as inquiries are received.

Requests for funding to assist with hazmat exercises are non-existent at this time. With the requirements for the counties to hold quarterly exercises for the EMPG program the need for hazmat exercises are low. Hazmat scenarios are usually included in the EMPG exercises. The State of South Dakota will always include and promote using HMEP grant funds for hazmat exercises.

Counties are still allowed to perform their own commodity flow study. With the recent completion of the statewide study requests are low at this time.

## GY2013 HMEP Training Grant

		First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	Proposed To Date	Completed	Completed	Completed	Completed
Awareness	0	0	0	0	0
Operations	15	0	0	0	0
Specialist	6	0	0	3	0
Technician	3	0	0	0	0
Incident Command	0	0	0	0	0
Hazmat Monitoring	0	0	0	0	0
Confined Space Rescue	0	0	0	0	0
Airport Rescue Live Burn	18	0	0	0	0
Airport Rescue Specialist	0	0	0	0	0
Airport Rescue Refresher	18	0	0	18	0
Hazmat IQ	89	0	0	0	0
Hazmat IQ Advanced	84	0	0	30	0
Hazmat IQ Air Monitoring	24				
HazCat	24	0	0	12	0
Various Conferences	12			3	
Total	293	0	0	66	0
			Total for the year	0	

(Additions or changes marked in red)

# Training

## First Quarter Review

- Prepare and send out the GY2013 HMEP applications to each of the 4 Hazmat teams, Fire Chiefs, County Emergency Managers, and State of South Dakota Regional Coordinators.
- The GY2013 HMEP grant training funding has been expended.
- It has been discovered that HMEP grant planning funds which have not been requested through the application process are also available to be used for training upon request. The request has to be made to the Grant administrators in Washington DC. The State of South Dakota has utilized the requesting process and with approval has moved \$8,400 from the planning grant to apply towards training.
- The new guidelines provided to the grantee and sub grantees include opportunities for Hazmat personnel to attend selected conferences throughout the year. This is a change from previous grant years.

## Second Quarter Review

## Third Quarter Review

- Allocated \$17,375 from the planning grant so Hazmat team members could attend the Cold Zone conference/training in Minnesota. This also provided funds for hazmat team members to attend the IAFC in Dallas Texas.
- Received authorization from PHMSA to move the remaining funds from the Planning portion of the grant so they can be applied to the training portion of the grant.
- Working with Blue Cell to bring 4 eight hour awareness classes and 2 twenty hour operations to the state to make use of the transferred planning grant funds.
- Work with hazmat team in RC to get 8 hour hybrid awareness class authorized by the Fire Marshalls office. This class will meet the requirements for SD certification.

## Fourth Quarter Review

## GY2013 Planning Grant

First Quarter	County	Status
Hazmat Plans	Bennett, Hamlin, Jerauld, Brookings Davison	Application accepted
Commodity Flow Study	Edmunds, Butte	Application accepted
Hazmat Exercise		

# Planning

## First Quarter Review:

- Prepare and send applications to LEPC chairpersons, County EM's and Regional Coordinators
- Locate the existing hazmat plan template. Update information in the plan. Make the document user friendly. Send template to planning districts and County EM's electronically.
- Process applications received
- After the initial application deadline had passed a reminder was send out via email to all of the County EM'

## Second Quarter Review

## Third Quarter Review

- Continue to work with the Planning Districts to get them involved with the Counties to upgrade or write a new hazmat plan.
- 2014 grant year applications have been returned and there is a lot more interest in upgrading plans and commodity flow studies with the rail traffic containing Bakken oil.
- 

## Fourth Quarter Review

**GY2013/2014 HMEP PLANNING GRANT**

Region	County	Hazmat Plan/Commodity Flow Study/Exercise	Beginning Date	Agreement Amount	Agreement Date	Payments	Match Amount	Match Required	Match Amount Remaining	Name	Agency	Address	City	State	Zip	Phone #	Fax	E-mail		
5	Bennett	Hazmat Plan		\$5,500.00	02/11/2014			\$1,385.00	(\$1,385.00)	Jeff Siscoe	Bennett CO EM	PO Box 426	Martin	SD	57551	605-685-6991		<a href="mailto:benncoem@goldenwest.net">benncoem@goldenwest.net</a>		
		HMEP Training grant		\$17,375.00				\$2,100.00	(\$2,100.00)											
		Hamilin	Hazmat Plan	3/1/2014	\$1,840.00	03/12/2014			\$460.00	(\$460.00)										
		Jerauld	Hazmat Plan		\$4,000.00	03/12/2014		\$0.00	\$1,000.00	(\$1,000.00)										
		Edmunds	Commodity Flow		\$3,600.00	03/24/2014			\$900.00	(\$900.00)										
		Brookings	Hazmat Plan		\$2,600.00	04/23/2014			\$650.00	(\$650.00)										
		Butte	Commodity Flow		\$1,600.00	06/02/2014			\$400.00	(\$400.00)										
		Davison	Hazmat Plan		\$4,000.00	06/27/2014			\$1,000.00	(\$1,000.00)										
									\$0.00	\$0.00										
									\$0.00	\$0.00										
									\$0.00	\$0.00										
				<b>Totals</b>		\$40,515.00		\$0.00	\$0.00	\$7,895.00	-\$7,895.00									
		<b>Grant Amount</b>	\$75,409.00		Fed Share \$60,327.00														Non-Fed Share \$15,082.00	
		<b>Amount Allocated</b>	\$40,515.00		\$40,515.00															
		<b>Amount Unallocated</b>	\$34,894.00		\$19,812.00															
		<b>Amount Paid Out FED</b>	\$0.00		\$0.00															
		<b>Amount Paid Out Non-FED</b>	\$7,895.00				\$7,895.00													
		<b>Amount Remaining</b>	\$67,514.00		\$60,327.00															

Grant end date 09/30/2014

- Agreement signature in process
- Funds allocated and agreement signed
- Paid & Not Balanced with Accountant
- Completed



