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About Enform

Enform is the safety association for Canada’s upstream oil and gas industry. For almost 60 years, Enform has been proud to work with industry to build a safe, well-trained workforce.

Our mandate is to develop safe work practices through a range of safety and training services and resources, including guidelines, safety alerts and information bulletins, COR certification, training courses and Petroleum Safety Conferences. Our portfolio of more than 120 industry training programs cover worker safety management, operations, and technology. All Enform products and services are developed in consultation with Canada's leading oil and gas industry trade associations.

Disclaimer

This document is intended to be flexible in application and provide guidance to users rather than act as a prescriptive solution. Recognizing that one solution is not appropriate for all users and situations, it presents accepted guidelines that apply generally to all situations, as well as recommended practices that may suit a company’s particular needs. The Guideline is designed to provide a useful starting point for those seeking to establish a return to work program.

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Availability

This document, as well as future revisions and additions, is available from:

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**PREFACE**

**PURPOSE**

The *Vehicle Recovery and Towing Guideline* has been developed to provide light and medium duty vehicle operators in the Petroleum Industry with a set of best practices to follow to avoid injury and damage while attempting to recover stuck vehicles.

By providing this Guideline, Enform hopes to increase awareness of safety issues and promote the safe usage of vehicles by personnel throughout the industry.

These guidelines are intended to establish the minimum standards of practice for vehicle recovery and towing within the Canadian Oil and Gas Industry.

**AUDIENCE**

The document provides information to members of the Canadian Petroleum Industry wishing to establish or adopt a set of guidelines for vehicle recovery and towing. This document is intended to be used as a guide only and is not all inclusive. The Guideline herein sets out in general principal the actions necessary when conducting basic vehicle recovery operations.

This Guideline has also been published in two different “Glove Box Edition” formats which can be used as is or adapted by companies within the Canadian Oil and Gas Industry.

**SCOPE AND LIMITATIONS**

The information in this guideline is for the recovery and towing of light to medium duty vehicles only.
ACKNOWLEDGEMENTS

The following individuals helped develop this Guideline through Enform. They represent a wide cross-section within the Petroleum Industry and provided forward-thinking views, as well as insightful recommendations to address the practical challenges of safe and effective vehicle recovery. We are grateful for each participant's efforts. We also wish to acknowledge the support of the employers of individual committee members.

Development

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<tr>
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BACKGROUND

This document was developed at the request of the Canadian Association of Geophysical Contractors.
KEY GUIDELINES WITH VISUALS

#1 RULE: IT IS ALWAYS BEST TO CALL A TOW TRUCK!

However, if your company permits and equips you to pull out stuck vehicles, these are the do’s and do not’s that you MUST ALWAYS RESPECT!

---

DO NOT use a lighter vehicle to pull out a heavier vehicle.

---

Check vehicle weight (GVW) on a plate on the driver door (add load!)

ONLY pull with a vehicle roughly the same size or larger than the stuck vehicle.
Check Minimum Breaking Strength (MBS)—should be 2-3 times stuck vehicle weight.

DO NOT use tow straps, chains, or cables that can become killer metal missiles! DO NOT use a web sling.

ONLY use a recovery strap with proper loops.
DO NOT attach to bumpers, ball hitches, bull bars, or tie down eyes. These can tear free under towing stress.

Check Working Load Limit (WLL) of shackle—should exceed recovery strap strength. Frame mounted receiver also needs to be rated to the required weight.

ONLY attach recovery strap securely to a load rated component, i.e., loop onto tow hooks, engineered recovery device or on shackle with pin in hitch receiver.
DO NOT let anyone stand...

Other than the two drivers, everyone is...

Align the vehicles so they are within 10 degrees of a straight line.

Here
or
here
or
here
or
here.
PROCEDURES

STEP BY STEP GUIDE FOR PULLING OUT A VEHICLE WITH A RECOVERY STRAP

1. Stop, consider the task at hand and assess the hazards.
   • If you have any questions or doubts at this point, call a tow truck, it remains your best option.
   • Use the checklist provided at the end of this document to make a safe decision.

2. If the vehicle recovery takes place on or near a roadway, you must implement a traffic warning or traffic control system (e.g., traffic cones or reflector flares).

3. Ensure that you have the correct equipment—a recovery strap is essential.
   • The recovery strap should be at least 6 m or 20 ft in length, with loops (not hooks) and in good working condition (no cuts or broken stitches).
   • If you do not have a recovery strap like this at hand, call a tow truck.

4. Check both vehicle weights and add the weights of any loads either vehicle is carrying.
   • The vehicle doing the pulling must be of equal or, ideally, greater weight than the vehicle that is being pulled.

5. Ensure the recovery strap has a Minimum Breaking Strength (MBS) that is 2-3 times the total weight of the stuck vehicle.
   • If it is less, the danger is the strap may snap under high tension.
   • If the MBS is greater, it will not function optimally (they are most effective when their elasticity enhances the pull).
   • Recovery straps are usually constructed so that each inch of width adds approximately 10,000 lbs (4,500 kg) of MBS (e.g., a 3 inch wide strap would usually have a rating of approximately 30,000 lbs [13,500 kg]).

6. Ensure tow hooks, hitch receivers and any shackles used are rated to loads that exceed the recovery strap MBS. In the event of excessive loads, the recovery strap should always be the weakest link and snap first.
   • A shackle should have a Working Load Limit (WLL) stamped on it (remember 1 ton = 2000 lbs or 900 kg).

7. As much as possible, clear out mud, sand, or snow from under the stuck vehicle and in front of the tires in the direction of the pull.

8. Position the pulling vehicle in line with the stuck vehicle—the pulling vehicle facing forward; the stuck vehicle being pulled from the front (ideally) or the back.
   • You need to be within 10° of a straight line—side loading can lead to serious vehicle damage.
   • You need to be sure you have a clear path straight forward free of any obstacles that is at least the length of the strap and stuck vehicle.
9. Lay out the recovery strap between the two vehicles and loop the strap onto a
tow hook bolted to the vehicle frame or put the loop on a shackle which is
properly pinned to a frame mounted hitch rated for recovery.
   • If using a threaded shackle, hand tighten the pin and then turn it back one
     quarter turn for ease of release later.
   • Never tie the strap onto the vehicle, slip the strap over a ball hitch, or
     attach it to anything other than a tow hook or frame mounted hitch.
   • Only use one recovery strap (never two in parallel)—however, there are
two options for creating additional length with two recovery straps if
needed:
   • Reduce the expected strength of the recovery straps by 25% if you are
     using two correctly joined straps.

10. Drape a heavy coat or blanket over the middle of the strap to dampen any
    backlash if it snaps or releases.

11. Agree on a plan and communication signals between the two drivers. Industry
    Recommended Practice Hand Signals for Directing Vehicles (IRP 12) provides a
    good system of signals to use.

12. Ensure all other bystanders are at least 2 times the length of the recovery strap
    to the side of the vehicles—both the strap and the vehicles lurching forward
    unexpectedly present a hazard.

13. The pulling vehicle accelerates slowly (to about 10-12 KPH) to build tension in the
    strap and provide a sustained pull. Once the slack is taken up, the stuck vehicle
    likewise applies acceleration in low gear to assist the pulling car. Neither vehicle
    should spin their tires.
    • Steady momentum is most effective—never resort to jerking or take a
      long run and jerk.
    • Maintain tension throughout the pull, do not allow slack to develop in the
      strap at any point.
    • After three attempts to pull the vehicle loose, it is time to stop and call a
      tow truck.

14. Do not remove straps until both vehicles are fully stopped and secured.
    • It is a good idea to clean and dry out a recovery strap after use as dirt
      and moisture weaken the strap.
Remember, if at any point in the process you have any safety concerns whatsoever or concerns about potential damage to either vehicle, stop and call a certified tow truck.
**VEHICLE MOUNTED WINCH PROCEDURES**

**USING A VEHICLE MOUNTED WINCH FOR VEHICLE RECOVERY**

1. Only use a vehicle mounted winch for vehicle recovery if you have had proper training on the safe and correct use of the winch.

2. Always wear heavy leather gloves when working with a winch.

3. Inspect the winch cable—never use a winch with a frayed winch line.

4. When one vehicle is winching out another, ensure both vehicles are in neutral (not park) and that the non-stuck vehicle has its parking brake engaged (ideally with transfer case in 4 wheel drive mode).

5. Only perform a self-recovery if you have a solid anchor point and a web sling (“tree saver strap”) and shackle configuration rated to exceed your winch capacity.

![Diagram](image)

The right way to do it: A web sling (tree saver strap) with winch cable hooked to the shackle pin—with a safety latch on the hook that is properly engaged. Never simply wrap the winch cable around an anchor point and hook it back on itself. Never use a recovery strap for this purpose. Always position the tree saver as low to the ground as possible.

6. Drape a heavy coat or blanket over the cable—this will dampen the recoil in the event of a cable or hook failure.

7. If winch controls permit, work as much to one side as possible, out of the recoil line of fire.

8. With a front mounted winch, always raise your hood—especially if your setup requires you to be in the vehicle during winching.

**Remember, if at any point in the process you have any safety concerns whatsoever or concerns about potential damage to either vehicle, stop and call a certified tow truck.**
**Pre-job checklist if using a vehicle recovery strap (a “no” on any of the following requires the user to call a tow truck):**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do both parties involved have permission from their respective companies to perform a vehicle recovery?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you checked and considered the gross vehicle weight (including loads) of both vehicles?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the total weight of the recovery vehicle equal or greater than the total weight of the stuck vehicle?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have a recovery strap with a Minimum Breaking Strength (MBS) that is 2-3 times the total weight of the stuck vehicle?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the recovery strap in good working condition (no visible tears or other damage)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have an appropriate attachment point on both vehicles?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If using a shackle, does it have a Working Load Limit (WLL) that is greater than that of the recovery strap?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have a coat or heavy blanket to lay over the middle of the recovery strap?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can you line up the recovery vehicle with the stuck vehicle?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the towing route free of any obstacles or hazards (e.g., trees or boulders)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you set up the necessary traffic control system?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you established clear communication signals between the two drivers?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do both drivers understand the correct procedure for the recovery attempt?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you clearly communicated the dangers and established a perimeter of 2 times the distance of the recovery strap for any bystanders?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do both drivers understand that after three failed attempts, a tow truck must be called in?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do both drivers understand the hazards of a recovery attempt, especially the deadly danger of recoil should any components fail?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you taken the time to consider any other possible hazards presented by your particular situation?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the risk to personal safety or the risk of equipment damage been assessed to be at an acceptable level?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pre-job checklist if using a winch for vehicle recovery (a “no” on any of the following requires the user to call a tow truck):

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you been provided clear instruction on the safe and correct use of the winch equipment that will be utilizing for the recovery?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If one vehicle is winching out another, is the total weight of the recovery vehicle equal or greater than the total weight of the stuck vehicle?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Is the winch motor and cable rated to the total weight of the stuck vehicle?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Do you have heavy leather gloves available to protect your hands?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Is the winch and cable in good condition?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>If using a shackle, does it have a Working Load Limit (WLL) that is greater than that of the winch?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>If attaching to an anchor point, do you have a proper strap and shackle configuration with an adequate load rating to attach your winch cable?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Does your anchor point or overall setup allow you to winch the stuck vehicle out in a relatively straight line?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Have you set up the necessary traffic control system?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Have you established clear communication signals between all participants?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Have you clearly communicated the dangers and established a perimeter of 2 times the distance of the uncoiled cable for any bystanders</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Does everyone involved understand the hazards of a recovery attempt, especially the deadly danger of recoil should any components fail?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Have you raised the hood of the winching vehicle and draped a coat or heavy blanket over the winch cable?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Have you taken the time to consider any other possible hazards presented by your particular situation?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Has the risk to personal safety or the risk of equipment damage been assessed to be at an acceptable level?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Always remember, a certified tow truck is always your best option in vehicle recovery.
ADDITIONAL POLICY ITEMS

Vehicle recovery apart from the use of a licensed tow truck and tow truck operator carries a level of risk and each company must consider the level of risk it is willing to incur in developing a company-specific policy. The guidelines in this document are just that, guidelines. They have been created with a view to preventing the most common mistakes individuals make in attempting vehicle recovery on their own. Companies are free to adapt or further develop these as they wish in developing their own vehicle recovery policies and procedures. Listed below are items a company developing a vehicle recovery policy may wish to consider:

1. There may be a need to specify that towing a disabled vehicle any distance is beyond the scope of “vehicle recovery” proper. It may be prudent to allow a vehicle to be towed a very short distance out of a high traffic area. This vehicle recovery guideline is designed with the notion that the stuck vehicle is capable of assisting with the recovery and will be fully capable of driving once pulled out.

2. There may be a need to specify terrain specific requirements. For example, steep terrain provides additional hazards including the danger of the recovering vehicle losing traction and sliding downhill as well as the increased load created when pulling a vehicle uphill. Heavy mud would also increase the load.

3. Companies with a fleet of vehicles may consider ensuring the strength rating of vehicle tow hooks and/or hitch receivers is clearly communicated to vehicle drivers in some fashion.

4. Companies may also consider providing concrete illustrations of correct towing procedures based on the vehicles in their fleet.
   - E.g., a GMC Sierra Half-Ton 4x4 with a GVM of 3175 kg (7000 lbs) can be pulled out using a recovery strap with a Minimum Breaking Strength (MBS) between 6350-9525 kg (14,000-21,000 lbs) and if using a shackle on a hitch receiver, its WLL must be greater than 9525 kg or approximately 10.5 tons.

5. Companies that provide recovery straps to their drivers may also specify a policy on re-use or strap inspection based on the manufacturer’s criteria. Straps degrade with repeated use (and particularly repeated use without an interval to allow the strap to recover from being stretched) or if they are allowed to remain dirty. A post-recovery procedure that includes cleaning the recovery strap may also be appropriate.

6. Vehicle recovery training may be deemed a prerequisite to enacting a vehicle recovery. Certainly in the case of vehicle winches, this guideline presumes training is a prerequisite to winch use.
7. Companies looking to include a policy on vehicle assistance on steep grades should consult *Engineering Update: Vehicle Assistance on Steep Grades*, a very useful document created by WorkSafeBC
**VEHICLE RECOVERY KIT**

A company with a vehicle recovery policy may well consider it prudent to provide its employees and/or fleet vehicles with a vehicle recovery kit that enables a recovery that aligns with its policies on vehicle recoveries. The following are components a company could consider for inclusion in a vehicle recovery kit:

- **Easy to use vehicle recovery instructions**
  - This document is available in a glove box edition to serve as such
  - Include a safety checklist
- **Recovery Strap**
  - Ensure it has an Maximum Breaking Strength (MBS) that is 2-3 times vehicle weight
- **Recovery hitch and shackle**
  - For vehicles with hitch receivers rated for recovery
  - Ensure vehicle hitch receiver and all components (especially pins) are sufficiently rated for recovery
- **Collapsible shovel**
- **Traffic cones or reflector flares**
- **Heavy blanket**
  - Multi-purpose but can be placed over recovery strap or winch cable to prevent recoil in event of breakage or release.
- **Heavy leather gloves**

**Commercially available vehicle recovery kits:**

There are also commercially available vehicle recovery kits. The example below includes a carrying bag, recovery strap, engineered recovery device designed for a hitch receiver, and a reflector to slide over the recovery strap.
REFERENCES

ALBERTA

Alberta Traffic Safety Act
Use of Highway and Rules of the Road Regulation

BRITISH COLUMBIA

British Columbia Occupational Health and Safety Regulation
Worker’s Compensation Act, Part 3 – Occupational Health and Safety

Engineering Update: Vehicle Assistance on Steep Grades (WorkSafeBC EU 2009:01)

SASKATCHEWAN

The Occupational Health and Safety Act, 1993
The Occupational Health and Safety Regulations, 1996