

# *Developing Large Scale Intelligent Checklists*

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[www.generalintelletics.com](http://www.generalintelletics.com)



[www.openrules.com](http://www.openrules.com)

Decisions are everywhere



# Decision makers face challenge and risk



Obtaining facts is frustrating



# CIPs require many facts

- ***About 50 covers in the universe***

- Common including CGL, property, marine cargo
- Esoteric including political violence, kidnapping, financial failure of an organization that has physical product custody

- ***Facts are organized into hierarchies***

- Insureds
  - Primary
  - Named
  - Additional
- Project
  - Type
  - Class
  - Product
  - Location
- Risk
- Financing
- Legal
- Contacts
- Organization
- Values
- Coverage
- Etc.

- ***Facts and hierarchy must be correct to gain user trust***

A “3C” fact set must precede a correct decision

*Correct*

*Complete*

*Consistent*

The traditional fact gathering process  
is inadequate







# Vague questions

Who's who?



## APPLICATION

Precious Metals & Mining Insurance Policy

### APPLICANT DETAILS

Client Name:   
Address:   
City/Province/Postal Code:

### LOCATIONS(S)

Complete the following:

Mine Name	Location	Type of Metal(s) Mined
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

### PRODUCTION

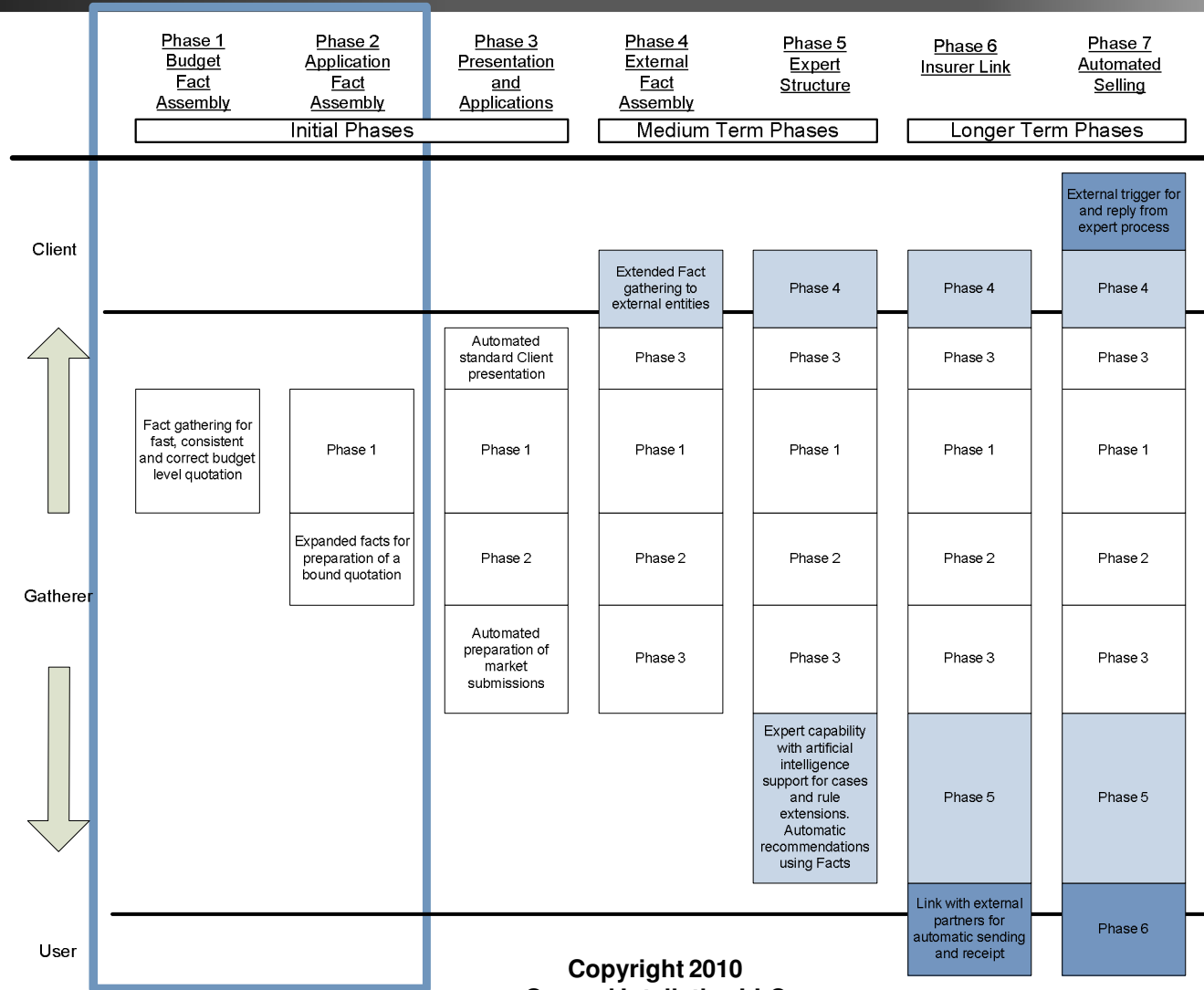
What is the Anticipated Annual Production (in ounces) for each of the metals named above?

Metal	Anticipated Annual Production (in ounces)
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Is the project fenced? Yes.....



# An intelligent checklist provides facts for better decisions



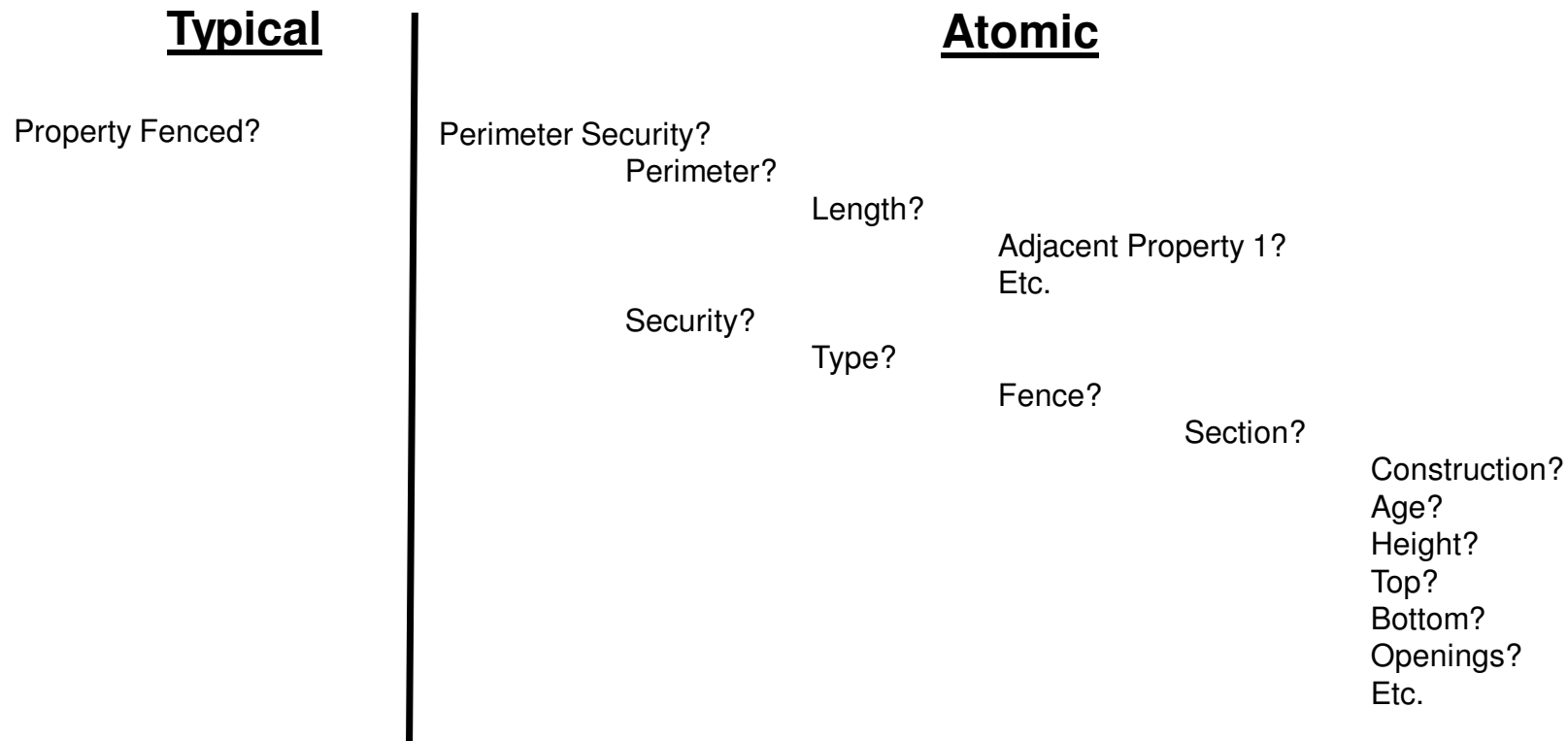
# An intelligent checklist guides the fact gathering process

- *It's dynamic and real time*
- *Exposes the fact universe*
- *Determines if the fact is required*
- *Explains the fact*
- *Recommends and validates possible answers*
- *Identifies issues based on other facts already answered*
- *Recommends how the issues should be resolved*
- *Tracks supporting documentation and the update history for each fact*
- *And most important – it learns and improves continuously*

# Atomic fact structure

From "*The Decision Model*" by Halle and Goldberg

- Fact must not have a different meaning if further decomposed
- Benefit of atomic definition exceeds detriment of large number of facts



# Dynamic rules architecture

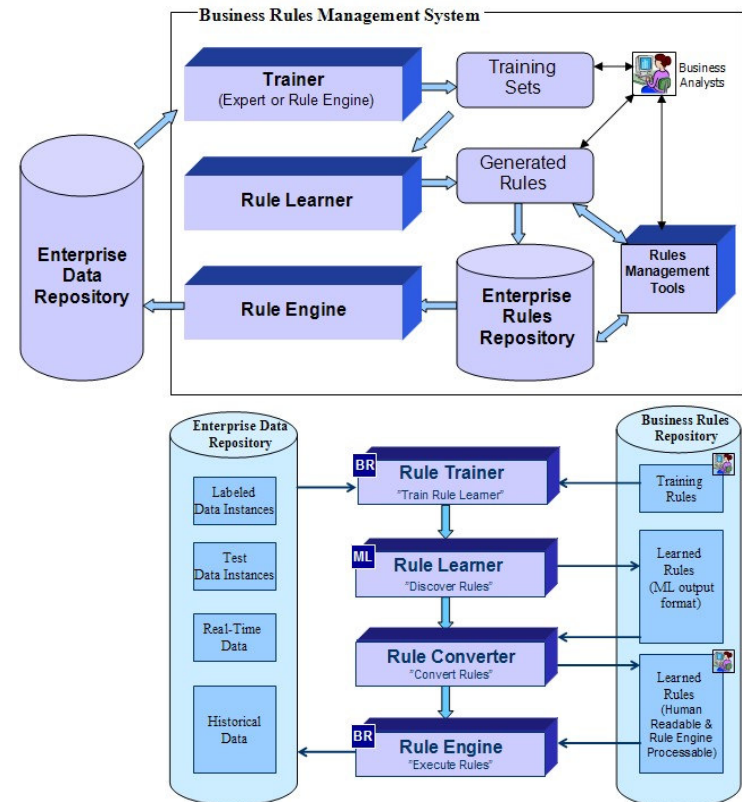
Subject matter expert cases



Formal training



True machine learning/AI



# Human engineered interface

## I-88 Freeway

<Enter Fact search terms>

- Project Location Country:** What country is the project located in?  
USA
- Project Location State:** What state is the project located in?  
Nevada
- Project Type:** What is the project type?  
Infrastructure
- Project Total Amount:** What is the total value of the project in the project currency?  
200,000,000
- Project Refueling Flag:** Will any equipment used on this project be refueled on the project site?  
Yes
- Project Construction Months:** What is the total length of the construction period for the project in months?  
24

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Complete

Recommended

Possible Issue

Issue

Available to Answer

No Answer Required

Legend

Injured

Class

Project

Risks

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Benefits are major





# For fact gathers

- *Virtual elimination of process based E&O claims*
- *Increased productivity and reduced costs*
- *Differentiation*
- *Standardization*
- *Versatility*
- *Increased lead funnel*
- *High ROI*
- *Early engagement*
- *Worldwide deployment*
- *Fact user relations*

# For fact users

- *Reduced need for budget indications*
- *Reduced coverage ambiguity*
- *Faster quotations*
- *Automated underwriting*
- *Reduced training costs*

# For fact sources

- *Significant management time and cost saving*
- *Easily updatable*
- *No knowledge required*
- *No errors*
- *No pressure*

Is it time?



A setback from inaction now may  
never be recovered

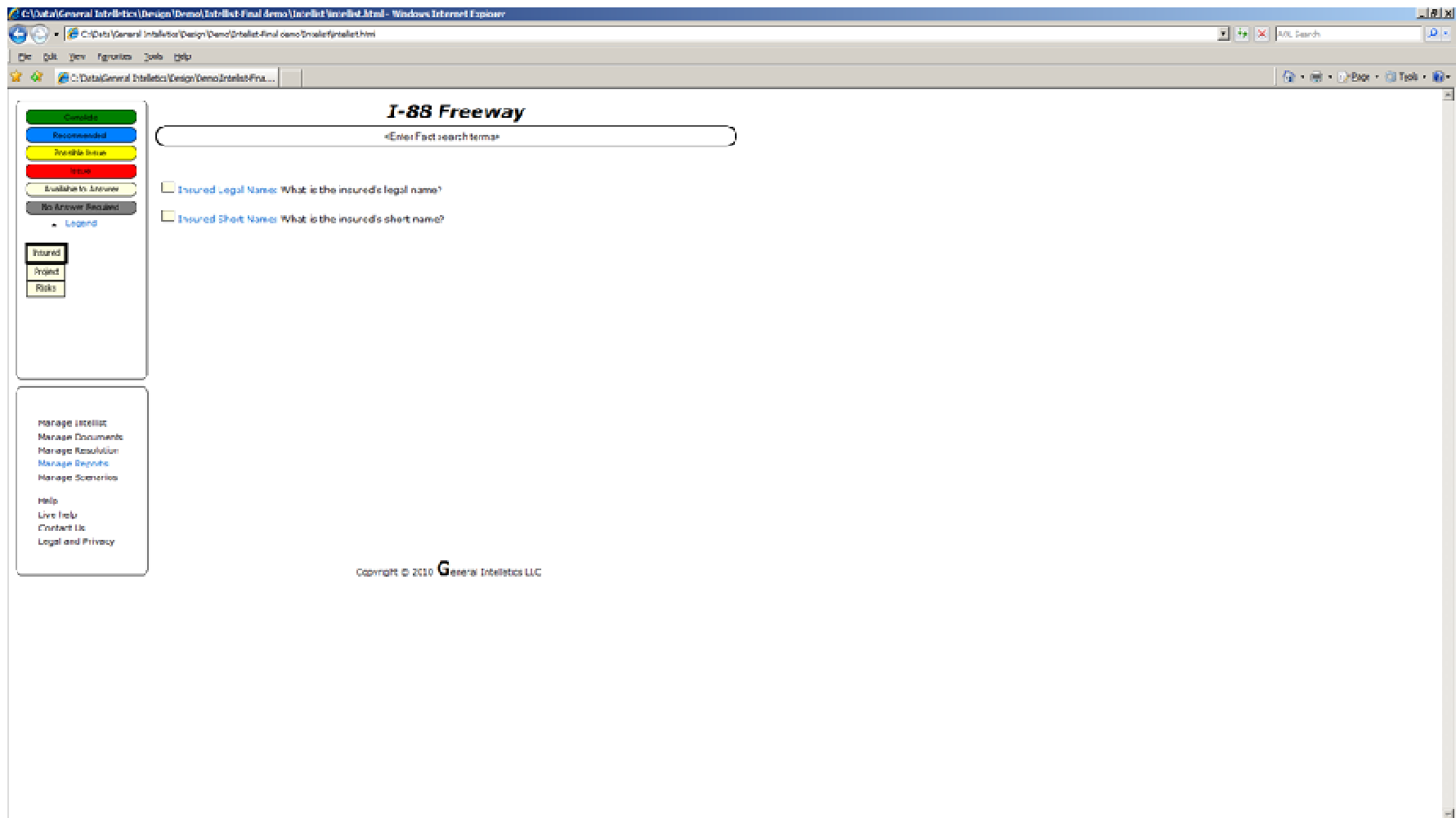




***“Just the facts, ma’am”***

# I-88 Highway intelligent checklist demonstration





Fact Group



C:\Data\General Intelligence\Design\Demo\Intellist - Intel Items\Intellist\Intellist.html Windows Internet Explorer

file://C:/Data/General Intelligence/Design/Demo/Intellist/Intellist.html

C:\Data\General Intelligence\Design\Demo\Intellist-Fru...

## I-88 Freeway

<Enter Fact search terms>

**Context**

recommended

Possible Issue

Issue

Available to Answer

No Answer Required

[Legend](#)

Report

Share


Project

Risks

**Project Location Country: What country is the project located in?** Owner: Bill Zemlak  
Due Date: No Due Date

A project may have support ownership or management in several countries, but the project location is where the primary physical operation of the project is undertaken

Example : United States



Name	Class	Type	Source	Date	Added	By	Comment	Manage
<b>Previous Resolution</b>								
Current Update		Date	4/6/2000	Time	1453 CST	By	WZZ	Manage

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Example of visual fact resolution

Windows Internet Explorer

File Edit View Favorites Tools Help

file:///C:/Data/General%20Intellics/Design/Demo/Intellics/Final%20demo/Intellics/Intellics.html

C:/Data/General Intellics/Design/Demo/Intellics/Fina...

**I-88 Freeway**

<Enter fact search terms>

Completed  
 Resolved  
 Possible Issue  
 Issue  
 Available to Answer  
 No Answer Required  
 Legend

Owned  
 Project  
 Risk

Owner: Bill Zemlak  
 Due Date: No Due Date

**Project Type: What is the project type?**

The project type is the physical description or purpose of the project in one or two words  
 Example: Mine

Infrastructure Railroad Refinery Building Mine Power plant

Enter Resolution

Name	Class	Type	Source	Date	Added	By	Comment	Manage
Previous: Resolution								Manage
Current Update				4/6/2005	1453 CST	WAZ		

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Example of visual fact resolution

Internet Explorer window showing the I-88 Freeway project page. The browser address bar shows the file path: `file:///C:/Data/General/Intellics/Design/Demo/Intellic-Find/2006emo/Intellic/Intellic.html`.

### I-88 Freeway

-Enter Fact search term-

Owner: Bill Zeniak  
Due Date: No Due Date

**Project Total Amount: What is the total value of the project in the project currency?**  
Large

The project value includes all hard costs, such as equipment, soft costs, such as engineering, and all owner costs allocated to the project, such as headquarters overhead and financing costs. The project currency is designated by the owner as the primary currency of the project, even though other currencies may be used to pay local vendors, for example.

Example: 100,000,000

Enter Resolution

**Validation Error**  
The Project Total Amount must be an integer (a number with no decimal places)  
Please enter a valid value

Name	Class	Type	Source	Date	Added	By	Comment	Message
<b>Previous Resolution</b>				<b>Date</b>	<b>Time</b>	<b>By</b>	<b>Comment</b>	<b>Message</b>
Current Update				4/5/2006	14:51 CST	WAL		

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Example of hard violation

Windows Internet Explorer browser window showing a web application for "I-88 Freeway".

**Page Title:** I-88 Freeway

**Search:** -Enter Fact search terms-

**Project Information:**

- Owner: Bill Zernick
- Due Date: No Due Date
- Project Total Amount:** What is the total value of the project in the project currency?  
200

**Description:**

The project value includes all hard costs, such as equipment, soft costs, such as engineering, and all owner costs allocated to the project, such as headquarters overhead and financing costs. The project currency is designated by the owner as the primary currency of the project, even though other currencies may be used to pay local vendors, for example.

**Example:** 100,000,000

**Warning:**

The Project Total Amount does not seem large enough for the project type.

You may (a) change the resolution of this Fact to eliminate the warning, (b) cancel the warning which will accept the entered residues or (c) keep the warning and enter the resolution as is.

**Resolution History Table:**

Name	Class	Type	Source	Date	Added	By	Comment	Manage
<b>Previous Resolution</b>								Manage
Current Update				4/6/2000	1453	CST	WA2	Manage

**Left Sidebar:**

- Context
- Recommended
- Possible Issues
- Issue
- Available to Admins
- No Answer Required
- Legends
- Inland
- Coastal
- Project
- MSK1

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Example of soft violation

Windows Internet Explorer window showing the Intellicat interface for the project "I-88 Freeway".

**I-88 Freeway**

<Enter Fact search terms>

**Project Refueling Flag: Will any equipment used on this project be refueled on the project site?**  
**Yes**

Owner: Bill Zarmlat  
 Due Date: No Due Date

Project equipment including light vehicles such as pickup trucks is often refueled on the project site from mobile fuel tank trucks. Fuels can include diesel, gasoline, natural gas or others depending on the equipment.

Buttons: Accept Recommendation, Enter Resolution

Radio buttons:  Yes,  No,  No Answer

**Recommendation**

The Facts that have been resolved below indicate there is a strong possibility that vehicles will be refueled on the project site.

Project Type: What is the project type?  
 Infrastructures  
 Project Class: What is the project class?  
 Highway

A resolution of Yes is recommended for the current fact.

Name	Class	Type	Source	Date	Added	By	Comment	Manage
<b>Previous Resolution</b>				<b>Date</b>	<b>Time</b>	<b>By</b>	<b>Comment</b>	<b>Manage</b>
Current Update				4/8/2008	1:43:05T	W&P		

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Example of recommended answer