

# *PEI Regulatory Approach to Management of Petroleum Contaminated Sites*



Past, Present & Future

# *The Past*



## **HOW DID THIS ALL START?**

- 100 years of use of petroleum, heating oil and a wide range of hydrocarbons
- Little awareness of the environment and health implications prior to the 1970's
- Departments with Environment responsibility not created until 1970's
- Common practice to only replace a storage tank after it leaks.

## *The Past cont.*



- In 1986 Department implemented Petroleum Storage Tanks Regulations. More than 3,200 underground tanks have been removed.
- In 2001 Department amended Petroleum Storage Tanks Regulations to cover home heating oil tanks. More than 38,000 home heating oil tanks inspected.
- The mission – stop the bleeding – remove leaking tanks – not decontaminate

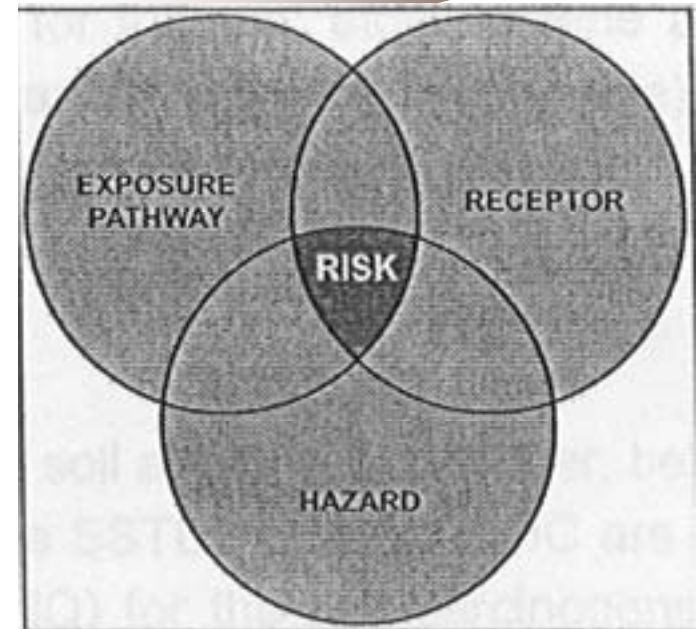
# *THE PAST cont.*



- By 1992, responsible parties wanted direction on clean up levels
- Department presented numbers for soils based on past experience, and groundwater based on CDWG
- This generic approach...which led to Reactive/Questionable Science/Adversarial Situations.
- By 1995 we recognized difficulties with generic approach No technology available to achieve generic levels
- Atlantic 4 Provinces = 4 sets of Generic Criteria
- In 1996 the Atlantic Provinces began meetings aimed at harmonizing clean up requirements –level the playing field

# ***Introduction to Risk Based Corrective Action***

- Risk Based Corrective Action (Rebecca) approach was introduced in 1996.
- It is exposure to and intake of, chemicals that has the potential to cause human & ecological health effects, not the presence of these chemicals.
- It allows for the utilization of site specific clean-up numbers.
- We realized we would need access to technical expertise and funds not resident in offices of Atlantic regulators.



# *Present - Atlantic PIRI Committee*

- The Technical Tool (RBCA Model) is identical in each jurisdiction.
- The Management Approach in each jurisdiction is similar however owing to differences in our legislative bases, some variances in approach exist.
- We are working however to eliminate differences to the greatest extent possible.

# *Partners in Rebecca*

## *Implementation - The Birth of PIRI*

- For support we turned to the Canadian Petroleum Products Institute (CPPI), Irving Oil Limited, and a number of Environmental Consulting firms
- PIRI committee was populated with experts in the fields of toxicology, hydrogeology, risk assessment, engineering and a variety of other skill sets

# *The Role & Value of the Atlantic PIRI Committee*



- The committee provides each Atlantic jurisdiction with access to technical expertise that we do not have within our Departments.
- It provides a forum for discussion and debate on technical issues between Government and Industry.
- It provides low cost participation to each jurisdiction.
- Creates a forum for discussion between the regulators

# *Present - Atlantic PIRI Committee*



- In our 10 year history the committee has focused largely on technical issues.
- We now see the need to move to examination of issues of a policy nature, i.e. regulatory liability.

# *Present – Atlantic Canada*



- Nova Scotia – 1996 Contaminated Property Guidelines, June 2004 Implementation of Atlantic RBCA v.2
- Newfoundland and Labrador – December 2004 Guidance Document for the Management of Impacted Sites
- New Brunswick - December 2003 Guideline for Management of Contaminated Sites Version 2
- P.E.I. - Petroleum Hydrocarbon Remediation Regulations

# ***THE PRESENT - NRTEE***



**National Round Table  
on the Environment  
and the Economy**



**Table ronde nationale  
sur l'environnement  
et l'économie**

# *NTREE*



- In 2003 NTREE released The National Brownfield Redevelopment Strategy for Canada
- The report makes recommendations for roles for 3 levels of Government – Federal, Provincial & Municipal

# Selected Recommendations - National Brownfield Redevelopment Strategy



- Permit binding contractual allocation of liability upon the sale of a brownfield (subject to safeguards).
- Provide for termination of civil liability after the expiry of an appropriate limitation period.
- Provide for termination of on and off site regulatory liability upon issuance of regulatory remediation approval.

# Selected Recommendations - National Brownfield Redevelopment Strategy



- Provincial governments approve risk assessment-based remediation
- The provinces establish legislation for approval and acceptability of remedial efforts

# *Present – Atlantic Canada*

- PIRI completed analysis of existing provincial legislation
- The analysis identified gaps in the present legislation that present potential obstacles to initiate Brownfield redevelopment.

# *Present – Atlantic Canada*



- New Brunswick, on behalf of Atlantic PIRI, established the New Brunswick Liability Working Group (NBLWG) to examine liability issues as they relate to contaminated sites & brownfields redevelopment.
- Examples: Lender Liability, Extinguishing Regulatory Liability, Transfer of Liability and others
- NBLWG report forthcoming next year.

# *The Present - Department*

- We have the technical tool (RBCA V.2)
- We have amended the *Environmental Protection Act* (EPA) legislation in 2004 that permits us to develop remediation regulations.
- We consulted with the Atlantic PIRI Committee on drafted version of regulations.
- Effective November 25, 2006, the regulations came into effect.

# *Guidelines versus Regulations*



- Courts do not view provincial guidelines as legally enforceable documents
- The Petroleum Hydrocarbon Remediation Regulations gives the guidelines “force of law.”

# *Regulation Highlights*



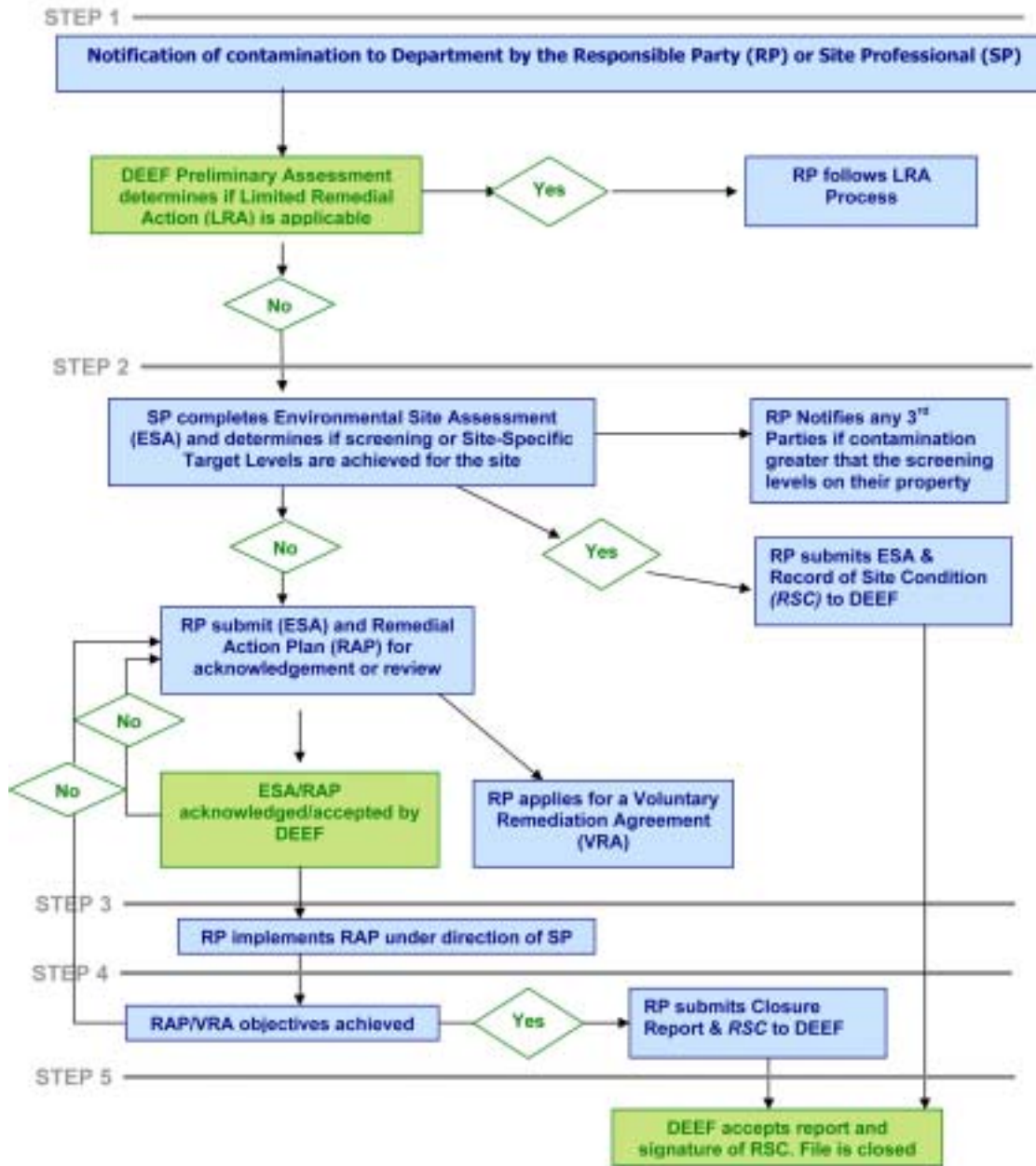
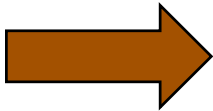
These regulations apply to sites where petroleum hydrocarbons are present at a site in excess of the acceptable concentration levels shown in the lookup tables (Section 2.1).

# *EPA Reporting Requirements*



Section 21 of EPA requires every responsible parties to immediately notify the Department of a petroleum spill. **This has not changed.**

# DEEF's PHRR IMPLEMENTATION PROCESS



Legend	Action by RP/SP	Action by DEEF
	(Blue box)	(Green box)

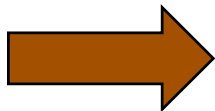
# *Highlights of Step 1 in Regulation Implementation Process*



## Step 1 – Notification

- Spill or release of petroleum product reported as pursuant to EPA's Section 21 of, i.e., storage tank system, during product delivery, or vehicular accident.
- Environmental Site Assessment (ESA) determines contamination greater than the screening levels

# DEEF's PHRR IMPLEMENTATION PROCESS



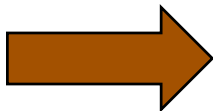
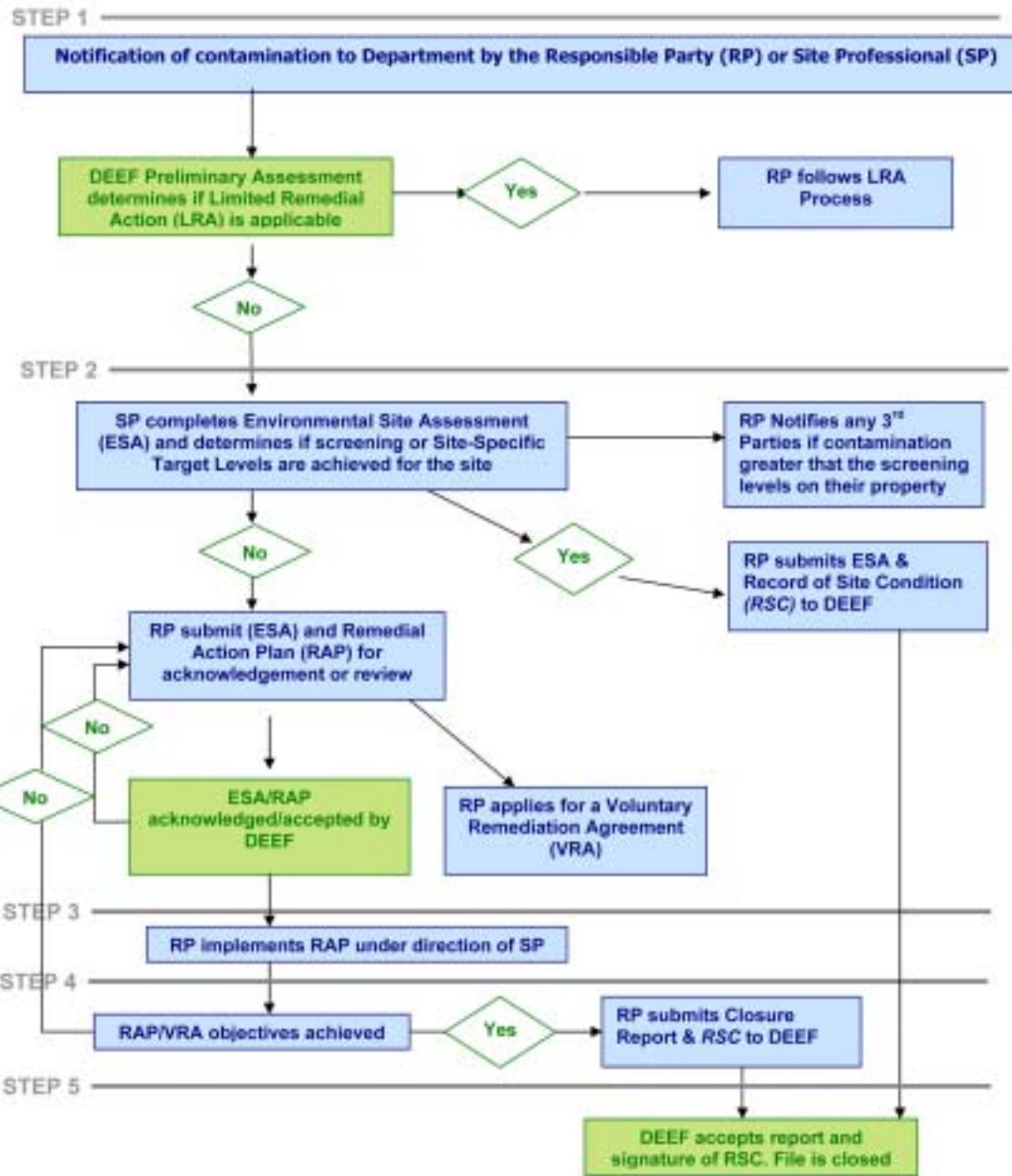
# *Highlights of Step 1 in Regulation Implementation Process*



For spill release instances, Department's preliminary assessment determines if:

- just Limited Remedial Action (LRA) is the applicable corrective action under our supervision, or
- if LRA and ESA necessary under Site Professional's (SP's) supervision.

# DEEF's PHRR IMPLEMENTATION PROCESS

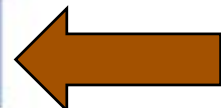
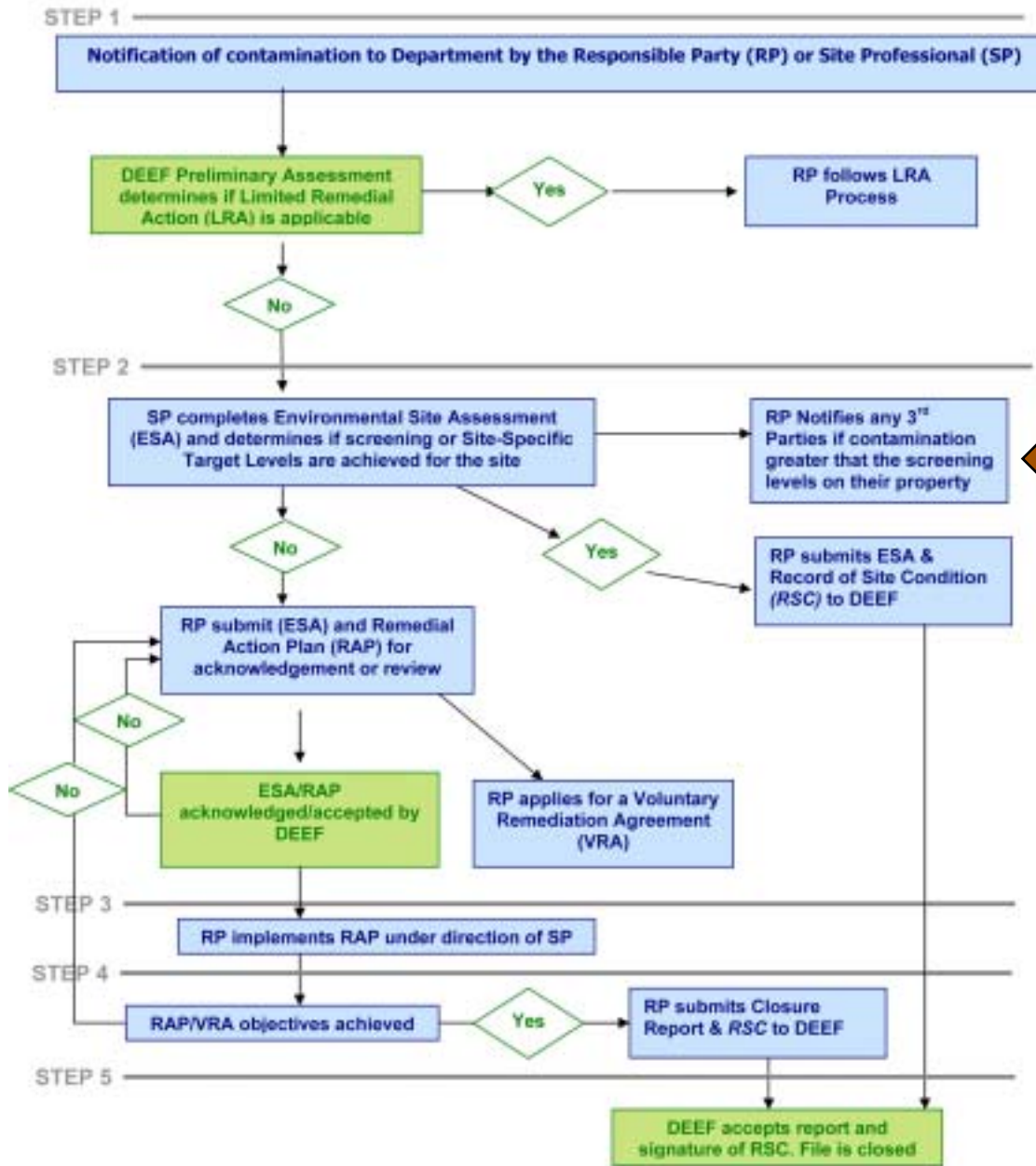


# *Highlights of Step 2 in Regulation Implementation Process*



SP completes Environmental Site Assessment (ESA) in accordance with current RBCA User Guidance document and determines if screening or Site-Specific Target Levels (SSTLs) are achieved for the site.

# DEEF's PHRR IMPLEMENTATION PROCESS

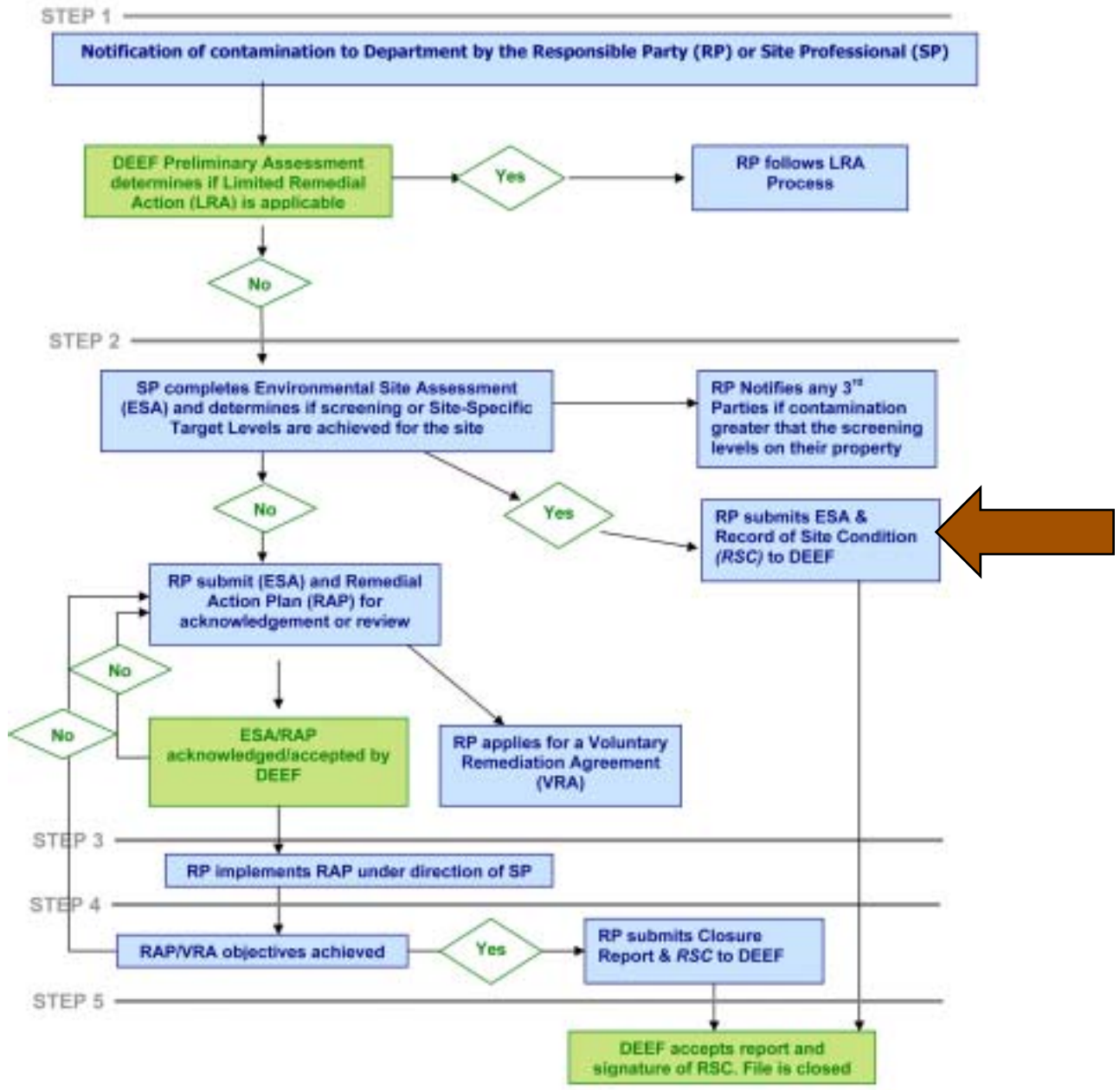


# *Highlights of Step 2 in Regulation Implementation Process*



- Responsible Party (RP) shall give written notice to all 3<sup>rd</sup> party property owners of impacts on their property greater than the lookup tables.
- This notice must be given within three working days of the notice given to the Department.

# DEEF's PHRR IMPLEMENTATION PROCESS

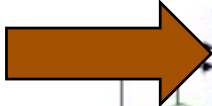
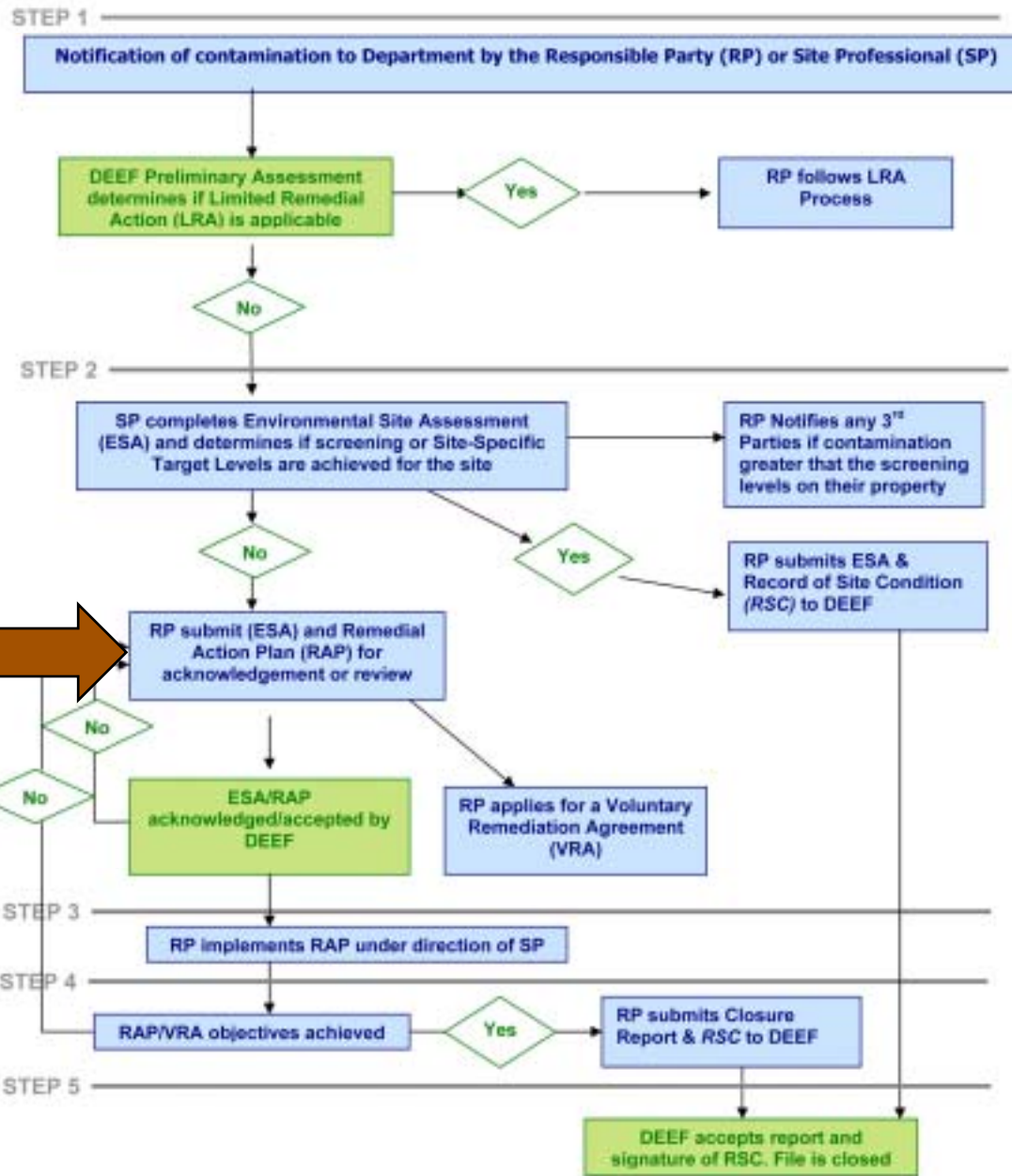


# *Highlights of Step 2 in Regulation Implementation Process*



Where ESA determines screening are exceeded, but not the Site-Specific Target Levels, RP submits ESA & Record of Site Condition (*RSC*) to the Department.

# DEEF's PHRR IMPLEMENTATION PROCESS

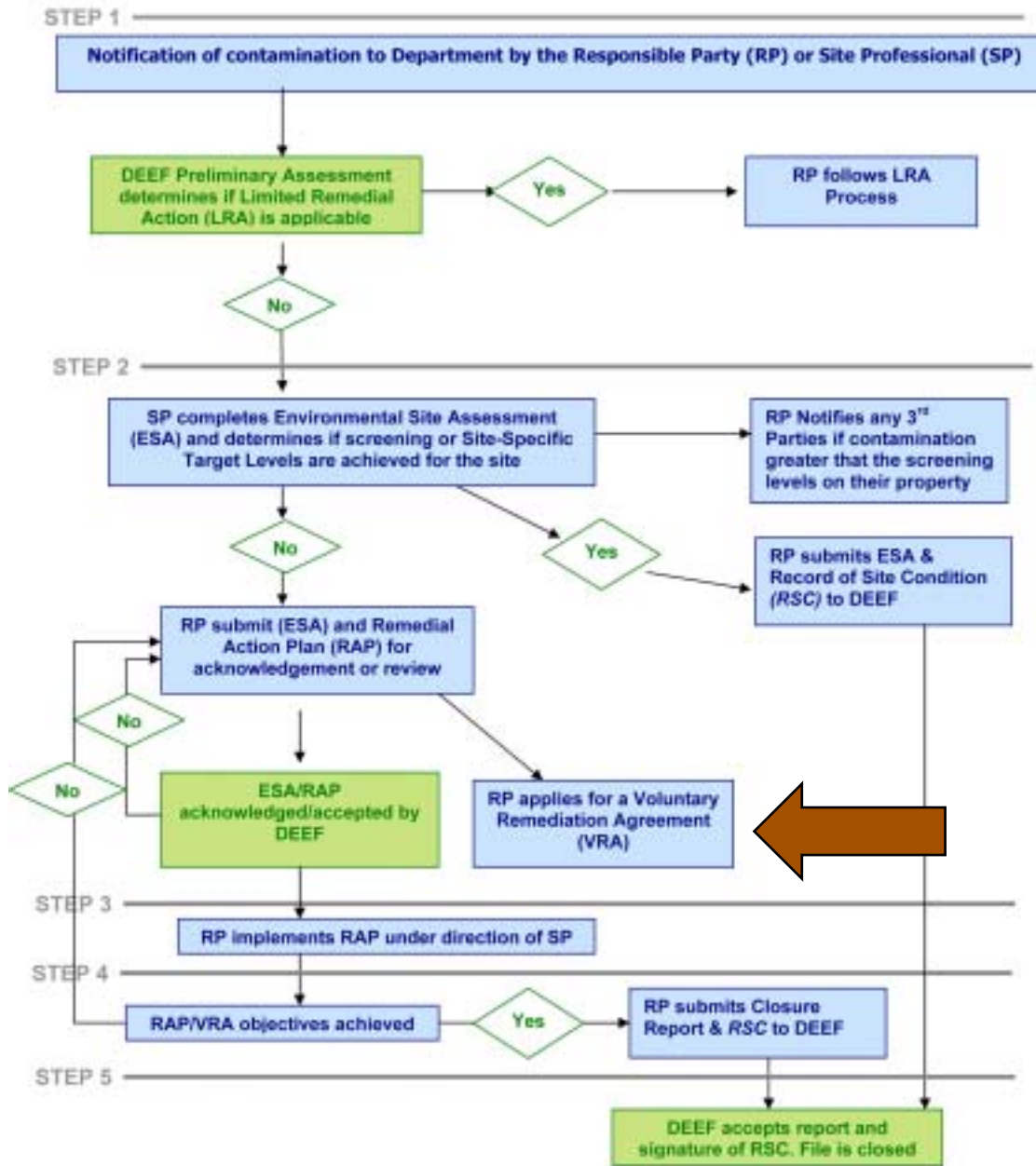


# *Highlights of Step 2 in Regulation Implementation Process*



- Where ESA determines screening or Site-Specific Target Levels are exceeded, RP must submit a Remedial Action Plan (RAP) within 60 days.
- No RAP shall be implemented without Department's acceptance.

# DEEF's PHRR IMPLEMENTATION PROCESS



Legend	Action by RP/SP	Action by DEEF

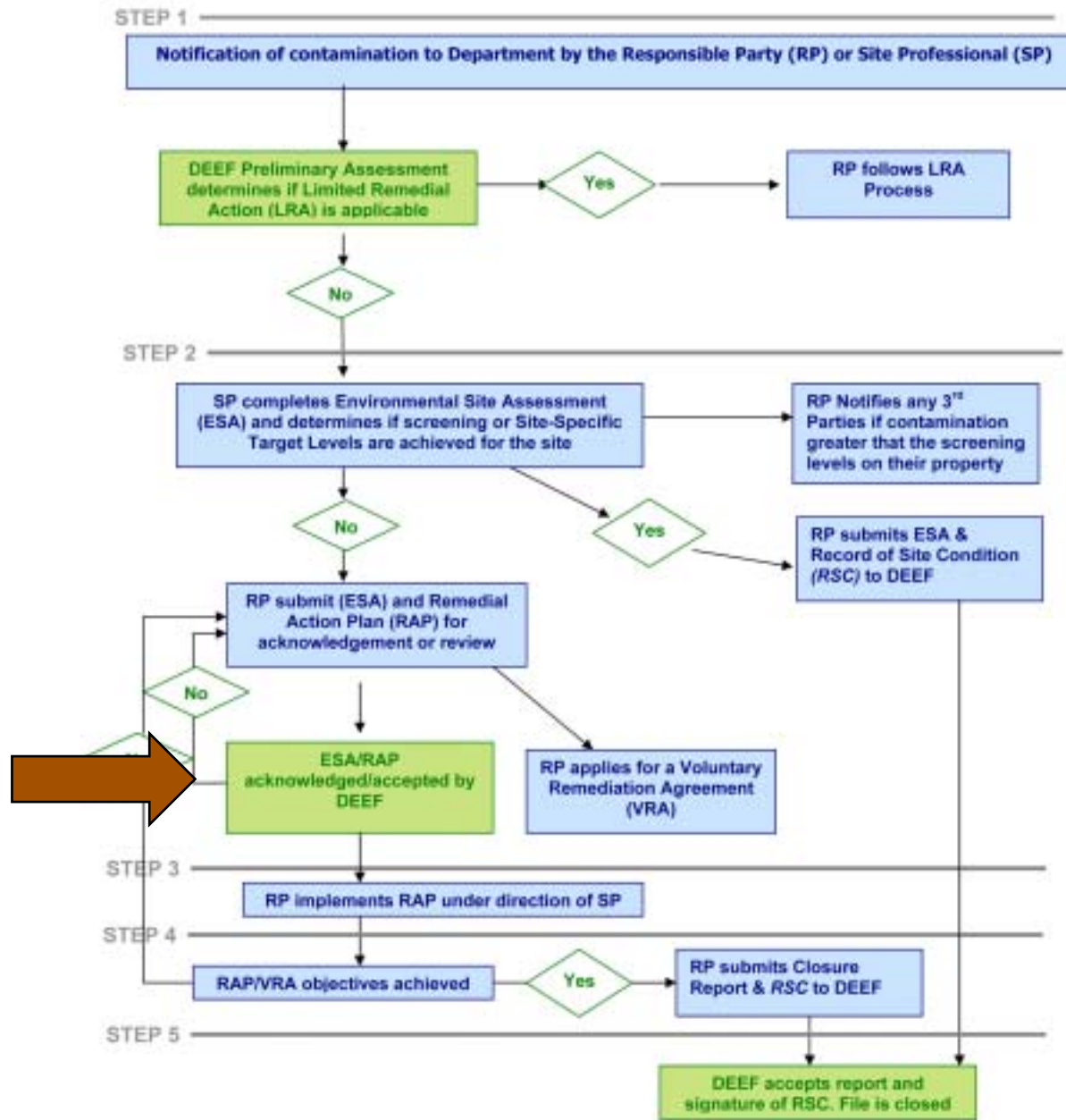
# *Highlights of Step 2 in Regulation Implementation Process*



## Voluntary Remediation Agreement

- RP completes VRA application on Form 2 of Schedule E.
- Department shall not initiate enforcement action in compliance with such agreement.
- Department shall not entry the site on the Contaminated Site Registry.

# DEEF's PHRR IMPLEMENTATION PROCESS

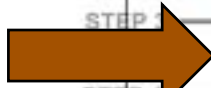
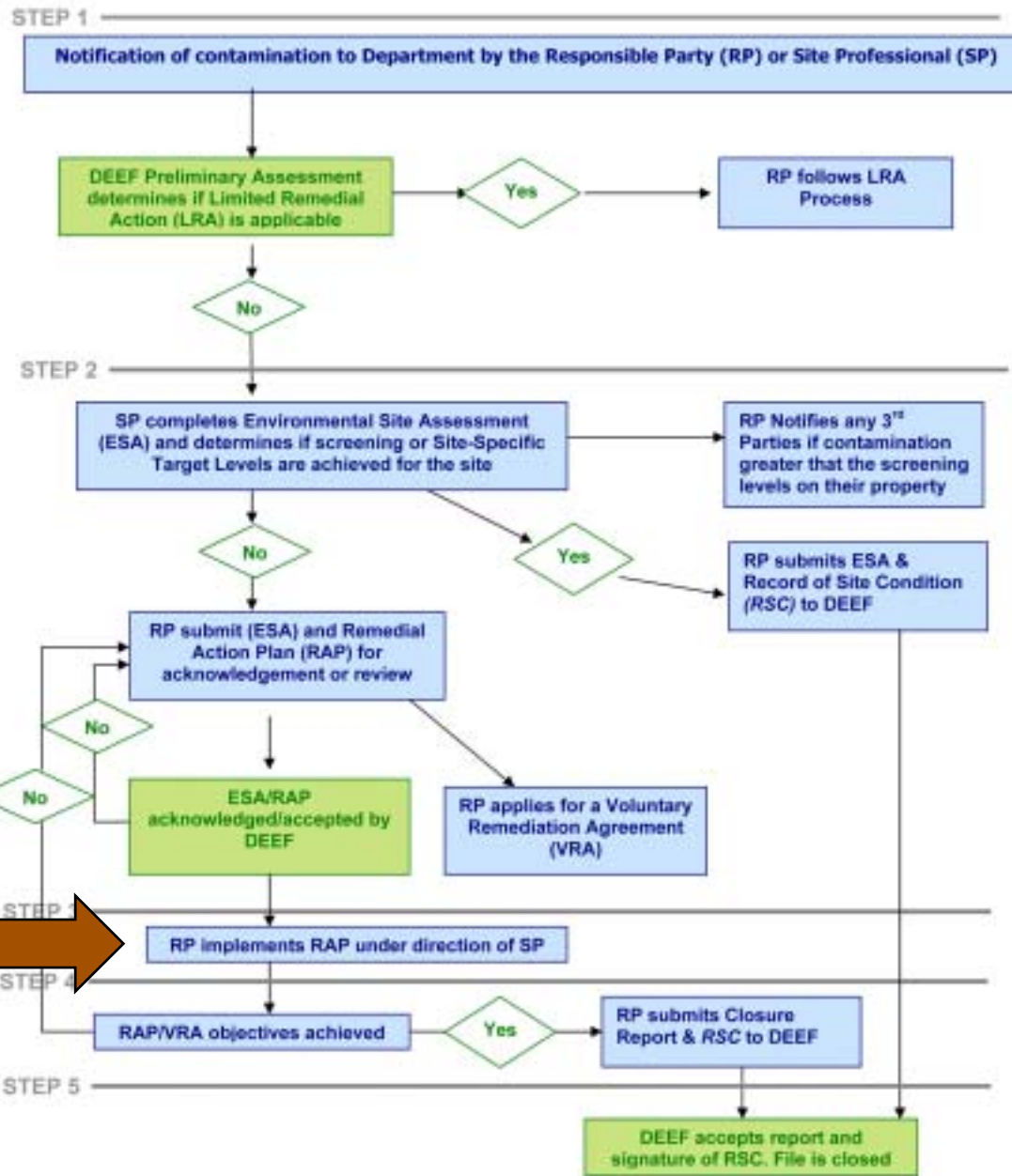


# *Highlights of Step 2 in Regulation Implementation Process*



- Department reviews ESA and the proposed RAP and then give written notice of rejection of the proposed RAP
- RP must submit a modified RAP with 30 days of above written receipt

# DEEF's PHRR IMPLEMENTATION PROCESS



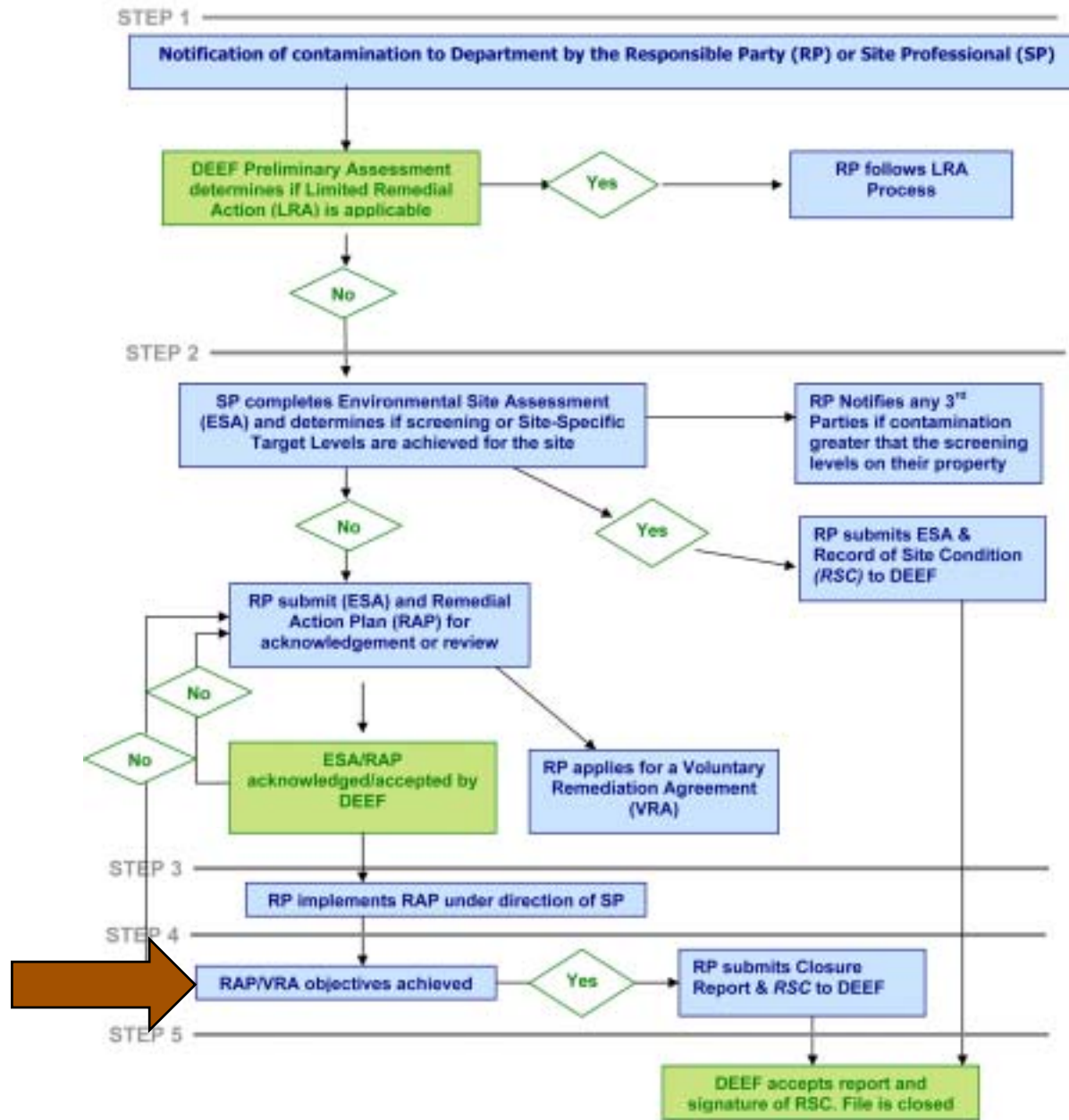
Legend	Action by RP/SP	Action by DEEF
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# *Highlights of Step 3 in Regulation Implementation Process*



- Department shall require monitoring during the implementation of the RAP to ensure schedule and target completion dates will be met.
- RP shall have SP periodical assess the effectiveness of the RAP.

# DEEF's PHRR IMPLEMENTATION PROCESS

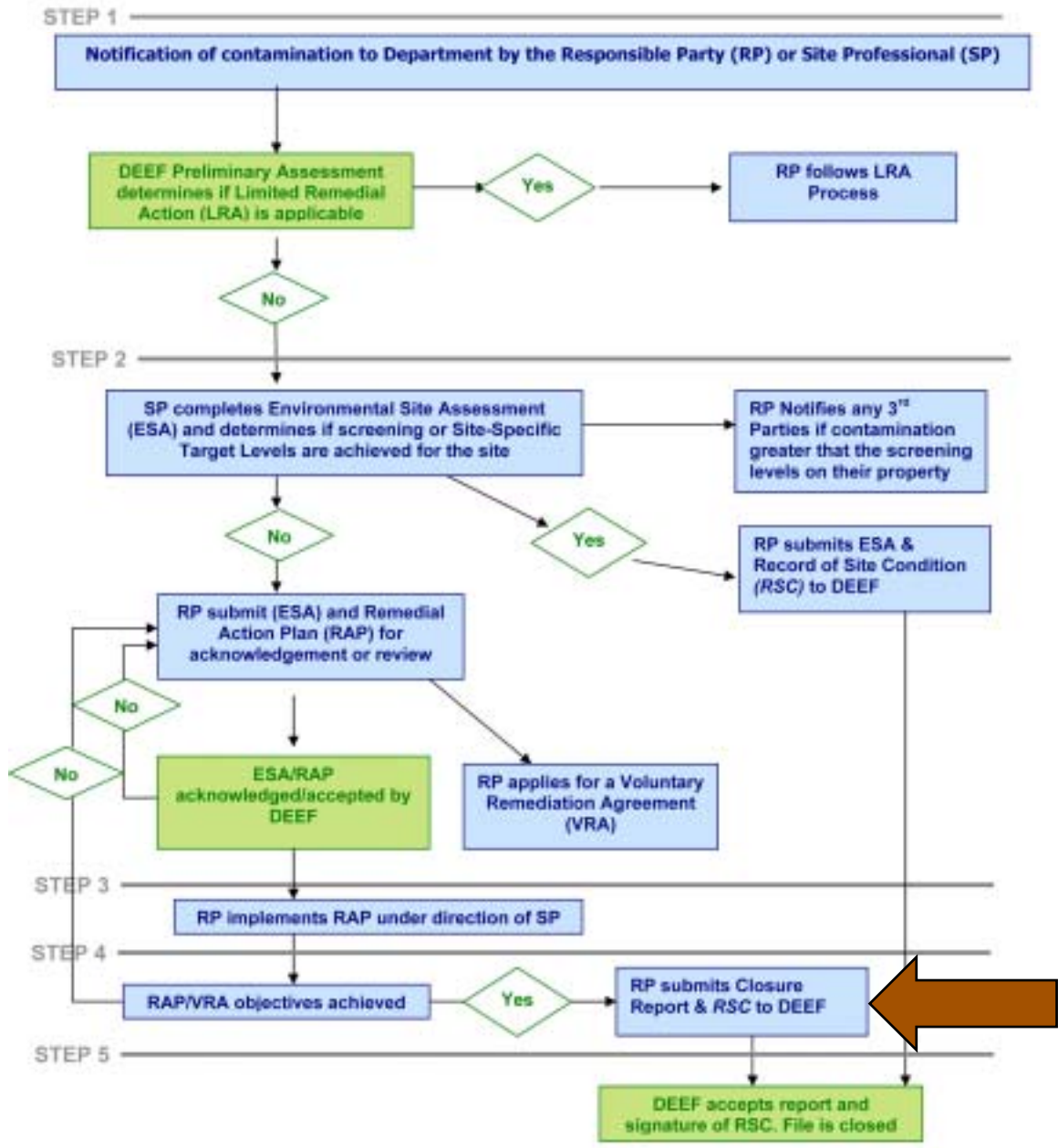


# *Highlights of Step 4 in Regulation Implementation Process*



- RAP objectives not met, RP may request extension of the target completion date.
- RAP objectives not met, Department can require a revised RAP.

# DEEF's PHRR IMPLEMENTATION PROCESS

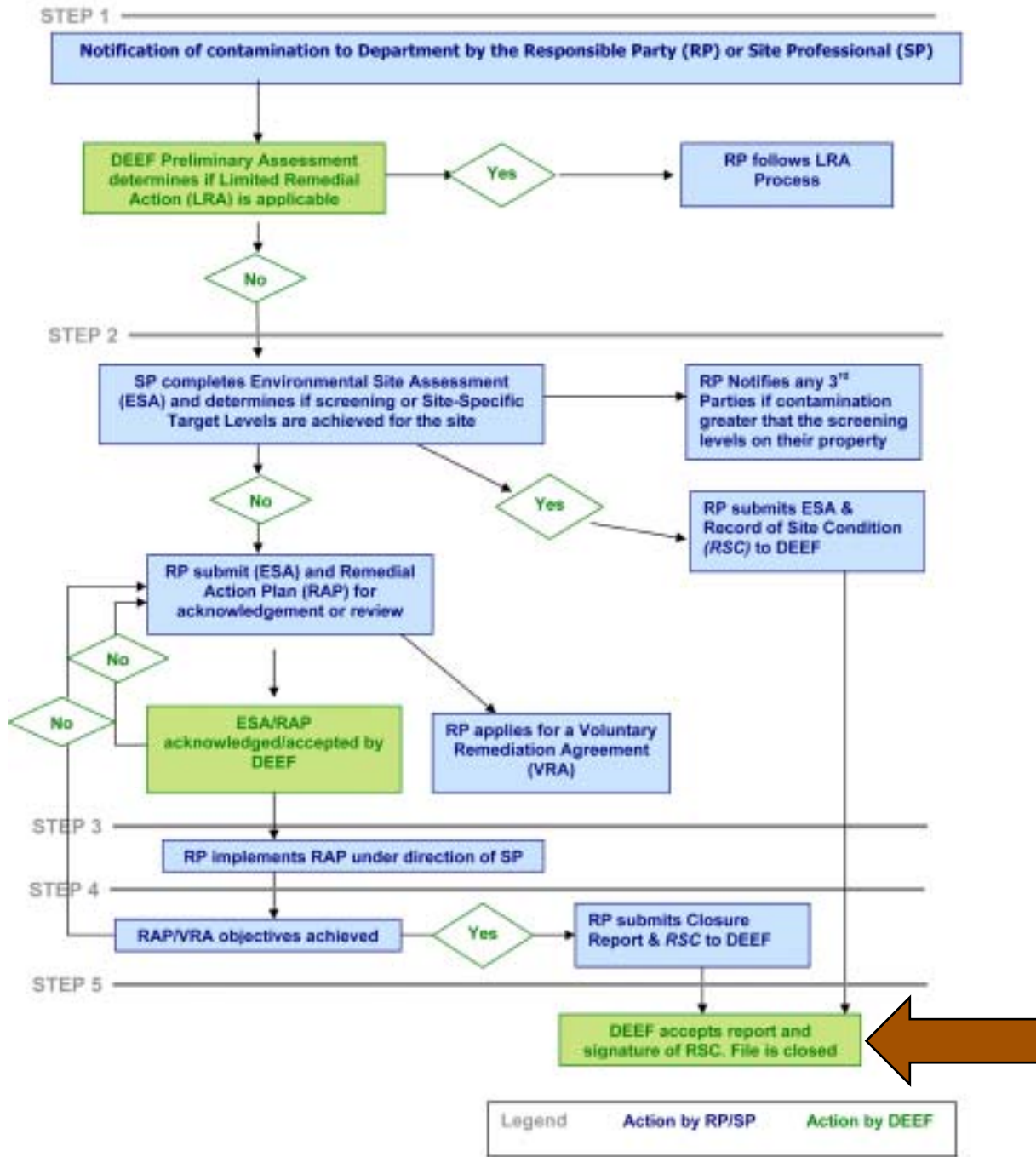


# *Highlights of Step 4 in Regulation Implementation Process*

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RP submits ESA & Record of Site  
Condition (*RSC*) to Department

# DEEF's PHRR IMPLEMENTATION PROCESS



# *Highlights of Step 5 in Regulation Implementation Process*



- The Department shall review the closure report and a record of site condition and shall give notice to the responsible party that we accept the documents submitted.
- Department or RP shall give written termination of VRA.
- File is closed.

DRAFT  
DEEF's PHRR LRA IMPLEMENTATION PROCESS

STEP 1

Notification of contamination to Department by the Responsible Party (RP) or Site Professional (SP)



DEEF Preliminary Assessment determines if Limited Remedial Action (LRA) is applicable

No

RP and SP proceed to Step 2 of the Contaminated Site Management Process

Yes

STEP 2

RP completes LRA under direction of a SP

No

RP completes LRA under direction of DEEF

RP submits closure report and Record of Site Condition to DEEF

STEP 3

DEEF determines if LRA was successful

No

Yes

Department issues closure letter

DEEF evaluates closure documentation and determines if LRA requirements are met

No

Yes

DEEF issues closure letter and acknowledges Record of Site Condition to RP and SP

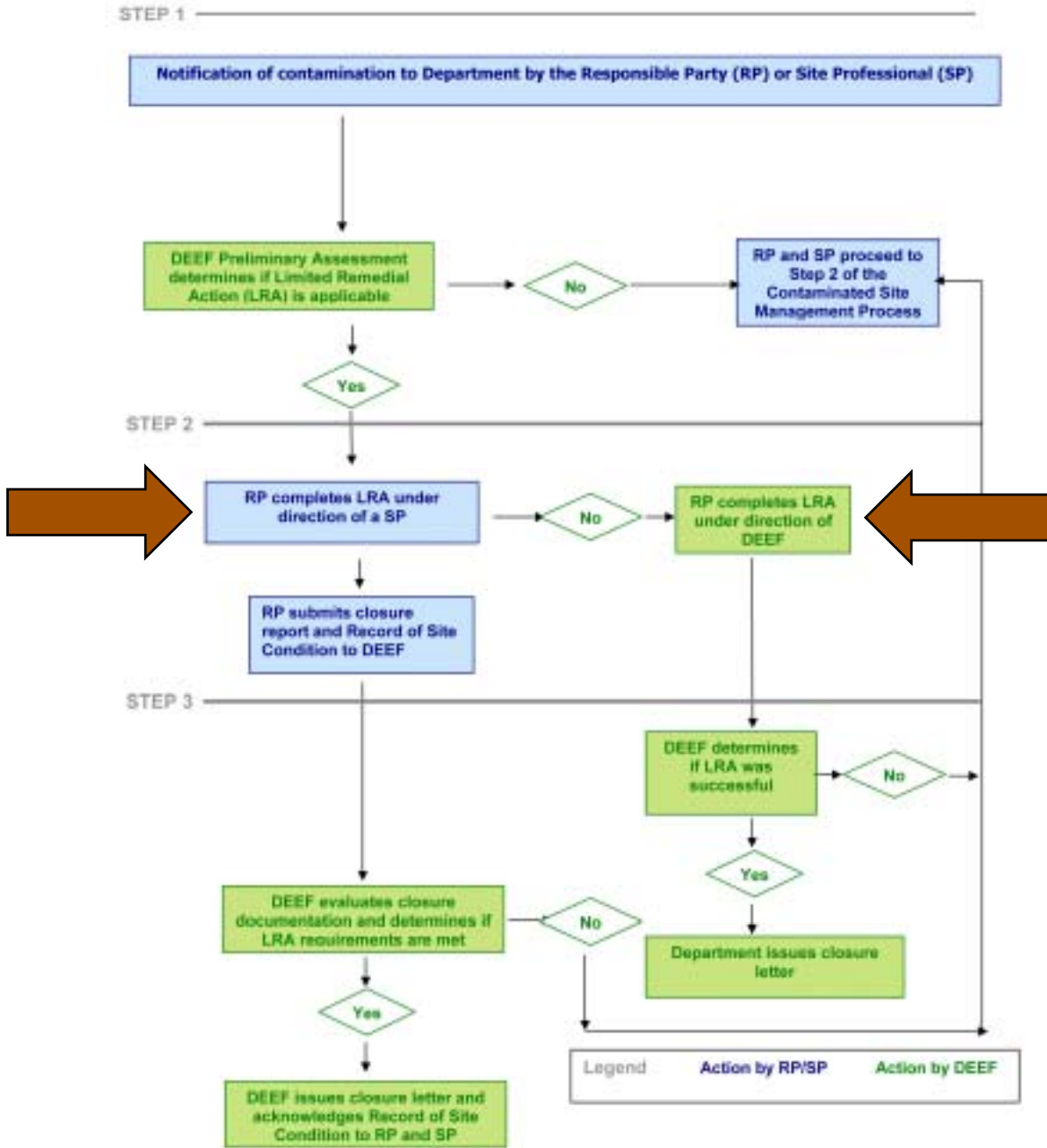
Legend      Action by RP/SP      Action by DEEF

# *Regulation Highlights*

## *LRA Use Restrictions*

- An underground petroleum storage tank system release at a retail outlet;
- Multiple sources of petroleum hydrocarbons at the site;
- Petroleum hydrocarbons has impacted the groundwater;
- Measures, other than short-term emergency action or excavation are required to address petroleum hydrocarbon vapours within a building;
- Non-petroleum hydrocarbons contamination found at the site, in addition to petroleum hydrocarbons;
- The site characteristics and possible exposure scenarios are incompatible with the RBCA default values set out in the RBCA User Guidance document.

DRAFT  
DEEF's PHRR LRA IMPLEMENTATION PROCESS



# *LRA Regulation Highlights*

- LRA only applicable for the cleanup of petroleum contaminated soil.
- Only a Department field inspector or Site Professional (SP) can supervise a LRA.
- Section 4(4)(b) requires the SP to complete the LRA in compliance with the Procedures set out in Schedule B.

# *Schedule “B” Regulation Requirements Highlights*

- Closeout Soil samples be collected from all walls and the floor of the remedial excavation.
- Where the petroleum hydrocarbons have reached bedrock, a base sample of the overburden soils shall be collected at the bedrock/overburden soil interface in the remedial excavation.

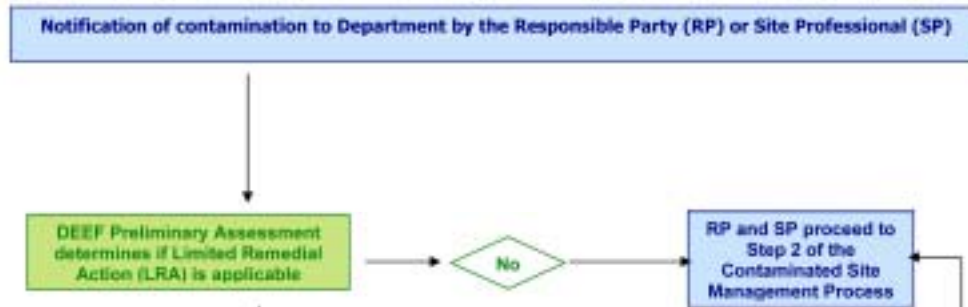
# *Schedule “B” Regulation Requirements Highlights*

When selecting the applicable criteria in the lookup tables, the SP shall take into account:

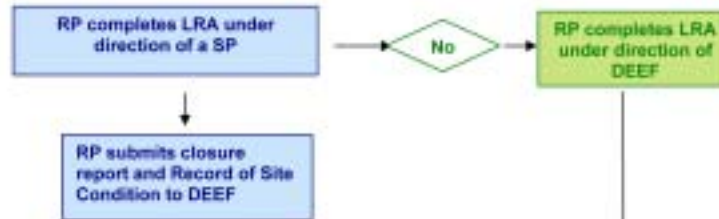
- current and reasonable potential future land use,
- current and proposed uses for groundwater on the site and on adjacent properties;
- the potential for groundwater to pollute potable groundwater;
- evidence of the degradation of local groundwater quality to a non-potable state; and
- whether the background groundwater quality indicates past human activities have caused degradation of groundwater quality to a non-potable state.

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DEEF's PHRR LRA IMPLEMENTATION PROCESS

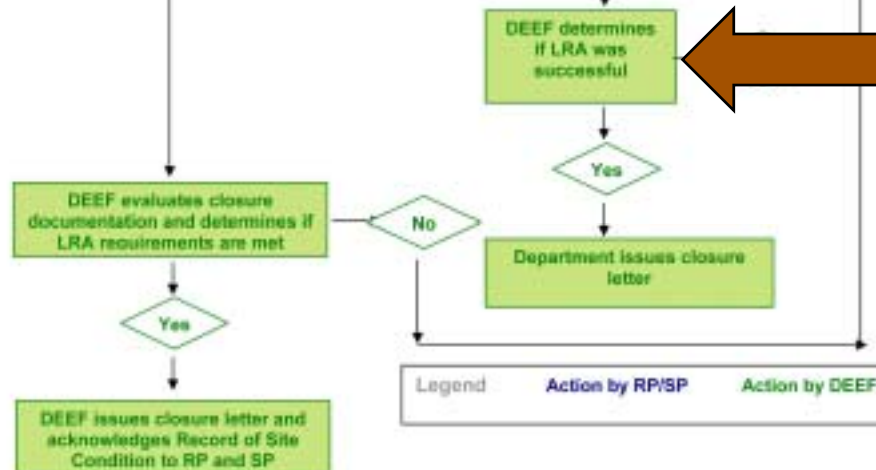
STEP 1



STEP 2



STEP 3



# *LRA Regulation Highlights*



- The Department reviews closeout soil samples results to determine if LRA objectives met.
- IF LRA objectives not met, DEEF can require RP to complete ESA to determine extent of impacts above screening or Site-Specific Target Levels

DRAFT  
DEEF's PHRR LRA IMPLEMENTATION PROCESS

STEP 1

Notification of contamination to Department by the Responsible Party (RP) or Site Professional (SP)

DEEF Preliminary Assessment determines if Limited Remedial Action (LRA) is applicable

No

RP and SP proceed to Step 2 of the Contaminated Site Management Process

Yes

STEP 2

RP completes LRA under direction of a SP

No

RP completes LRA under direction of DEEF



RP submits closure report and Record of Site Condition to DEEF

STEP 3

DEEF determines if LRA was successful

No

Yes

Department issues closure letter

DEEF evaluates closure documentation and determines if LRA requirements are met

No

Yes

DEEF issues closure letter and acknowledges Record of Site Condition to RP and SP

Legend      Action by RP/SP      Action by DEEF

# *LRA Regulation Highlights*

- After completion of LRA, the SP shall submit a closure report and a record of site condition to the Minister.
- Section 5(3) prohibits a site professional from submitting a closure report if:
  - the petroleum hydrocarbons in the soil caused objectionable odours in the indoor air;
  - the petroleum hydrocarbons reached bedrock at the site that has a potable water well; or
  - any of the conditions referred to in subsection 4(5) exist.

DRAFT  
DEEF's PHRR LRA IMPLEMENTATION PROCESS

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RP completes LRA under direction of a SP

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RP completes LRA under direction of DEEF

RP submits closure report and Record of Site Condition to DEEF

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DEEF determines if LRA was successful

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Yes

Department issues closure letter



DEEF evaluates closure documentation and determines if LRA requirements are met

No

Yes

DEEF issues closure letter and acknowledges Record of Site Condition to RP and SP

Legend      Action by RP/SP      Action by DEEF

# *LRA Regulation Highlights*



- The Department shall review the closure report and a record of site condition and shall give notice to the responsible party that we accepts or rejects the documents submitted.
- IF LRA objectives not met, DEEF can require RP to complete ESA to determine extent of impacts above screening or Site-Specific Target Levels

DRAFT  
DEEF's PHRR LRA IMPLEMENTATION PROCESS

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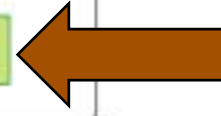
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Legend    Action by RP/SP    Action by DEEF



# *LRA Regulation Highlights*



- The Department shall review the closure report and a record of site condition and shall give notice to the responsible party that we accept the documents submitted.
- File is closed.

# *Future - Atlantic PIRI*

- Along with NBLWG report, NB will bring forth an implementation plan. Atlantic PIRI will be working with NB on the implementation plan.
- 2007 Technical Review of RBCA Toolkit.