



**WATER QUALITY
MONITORING REVISION
REGULATORY CONCEPT
WORKSHOP
March 30, 2007**

**California Environmental Protection Agency
Department of Toxic Substances Control
Hazardous Waste Management Program**



OVERVIEW

Presentations:

- **Susan Solarz: Overview**
- **Dan Gallagher: Existing Regulations**
- **Chris Guerre: Proposed Changes**
- **Public Comments and Questions**

WORKSHOP OBJECTIVES

- **Regulatory Concept Stage: Preliminary draft text**
- **Today's comments (and written comments) will be used to develop draft regulations to be presented during a formal 45-day rulemaking process**



REGULATORY CONCEPT OVERVIEW

- **Revise water quality monitoring requirements for hazardous waste land disposal facilities
(Title 22, Division 4.5, Chapters 14 and 15, Article 6)**

REGULATORY CONCEPT OVERVIEW

- **Flexibility in surface water, groundwater, and soil pore liquid monitoring**
- **Facilities with Commingled Plumes from Regulated Unit and Solid Waste Management Units (SWMUs) may use Alternative Water Quality Monitoring Requirements with DTSC approval**

REGULATORY CONCEPT OVERVIEW

KEY POINTS

- **DTSC must approve alternative requirements**
- **Must protect human health and environment**
- **Eliminate duplicative requirements for commingled plumes**
- **Consistent with federal regulations**

REGULATORY CONCEPT OVERVIEW

- **Text of Regulations Changes Can Be Found on DTSC's Webpage:**

http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/Water_Quality_Monitoring_Requirements_Regs.pdf

REGULATORY CONCEPT OVERVIEW: APPLICABILITY

- **Hazardous Waste Land Disposal Facilities with “regulated units” (surface impoundment, waste pile, land treatment unit or landfill)**
- **Aboveground and underground hazardous waste storage tanks are subject to Article 6 water quality requirements during the post-closure care period if the facility cannot be clean closed**
- **Interim Status and Permitted Facilities**
- **Approximately 100 facilities statewide**

REGULATORY CONCEPT OVERVIEW: WHY REVISE ARTICLE 6?

- **California 10 years experience**
 - **Some regulations not technically feasible and/or resource-intensive with minimal environmental benefit (ex. Unsaturated zone monitoring)**
- **More rigorous than current federal regulation, changes not required for RCRA Authorization**

REGULATORY CONCEPT OVERVIEW: WHY REVISE ARTICLE 6?

Federal Regulation Changes

- **RCRA Burden Reduction Initiative of 2006**
 - **Streamline federal requirements for RCRA hazardous waste facilities**
 - Monitoring frequency (66264.97, 66265.97)
 - Flexibility sampling for appendix IX constituents and timeframes for resampling (66264.98, 66264.99)
 - **Post-Closure Rule of 1998**
 - **Flexibility for post-closure care and groundwater monitoring requirements**
 - Eliminate duplicative oversight for commingled plumes with regulatory oversight by different programs (66264.90, 66265.90)

REGULATORY CONCEPT OVERVIEW: WHY REVISE ARTICLE 6?

- **Additional requirements: well decommissioning**
- **Grammatical and typographic errors**

RULEMAKING SCHEDULE

- **Written comments due April 30, 2007**
- **Formal 45-day public notice and comment period (Summer/Early Fall 2007)**
- **Adoption of revised regulations (Early 2008)**

NOTE: DATES ARE TENTATIVE

CURRENT MONITORING REGULATIONS

***California Code of Regulations, Title 22,
Division 4.5, Chapter 14 & 15, Article 6***

Water quality monitoring at hazardous waste facilities with regulated units:

- Surface Impoundments
- Waste Piles
- Land Treatment Units
- Landfills
- Miscellaneous Units

Article 6 also applies to hazardous waste tanks which cannot be clean closed

CURRENT MONITORING REGULATIONS

Water quality monitoring for detection, evaluation, and cleanup of releases of hazardous waste, hence three programs within Article 6:

- Detection Monitoring Program
- Evaluation Monitoring Program
- Corrective Action Monitoring Program

Each program requires monitoring of:

- Vadose (Unsaturated) Zone
- Surface Water
- Groundwater

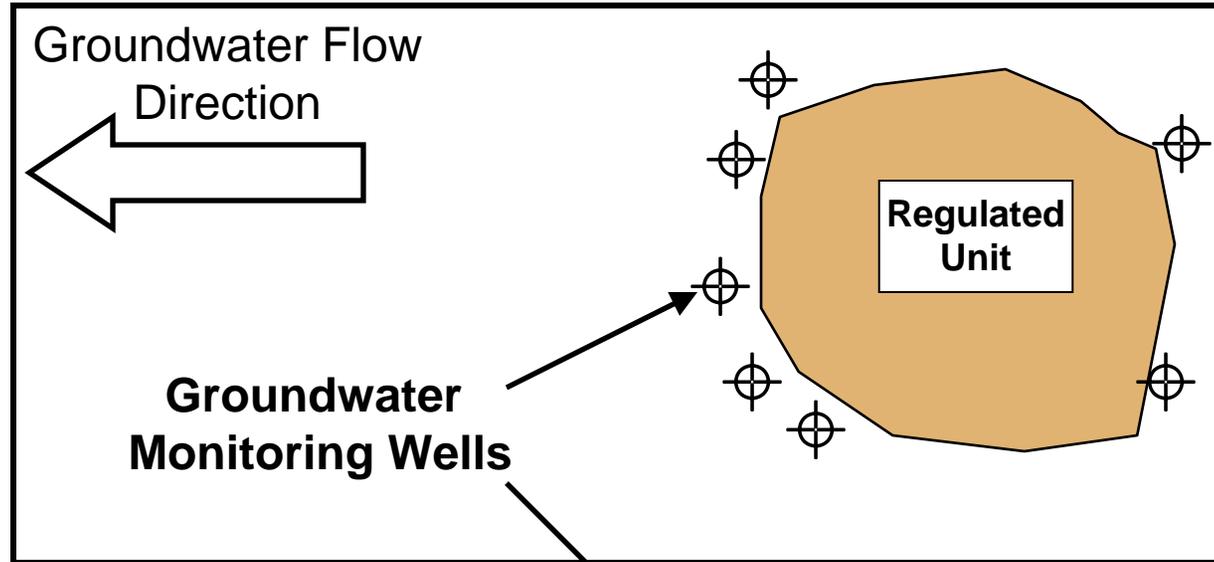
CURRENT MONITORING REQUIREMENTS

DETECTION MONITORING PROGRAM

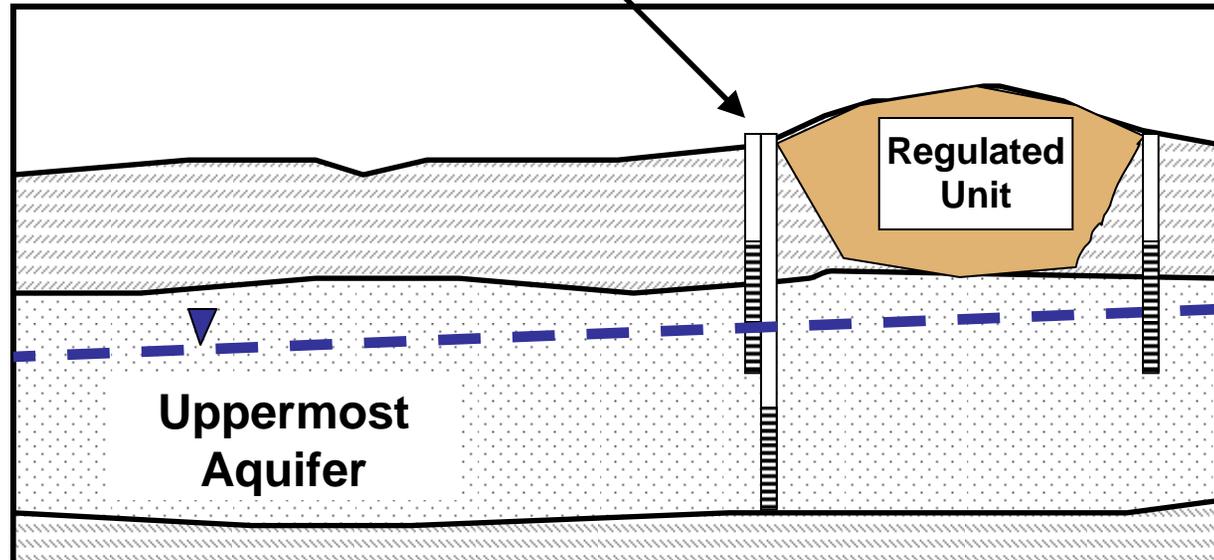
**Provide Reliable Indication of a Release of
Hazardous Waste**

DETECTION MONITORING

MAP VIEW



CROSS SECTION VIEW



CURRENT MONITORING REGULATIONS

DETECTION MONITORING PROGRAM:

- **Monitoring wells at downgradient edge of unit**
- **Sampling and Analysis Plan**
 - Chemical constituent list (monitoring parameters)
 - Quarterly water level measurements
 - Semi-annual groundwater sampling
 - Consistent sampling procedures
 - QA/QC procedures
- **Statistical Evaluation Plan**
 - Comparison of upgradient and downgradient wells to determine release occurrence (metals)

CURRENT MONITORING REGULATIONS

DETECTION MONITORING PROGRAM

If detect release, then:

- Conduct verification sampling (66264.98(j)(2))
- Sample all points for constituents of concern (66264.98(k)(1))
- Sample all points for Appendix IX constituents (66264.98(k)(2))
- If Appendix IX constituents found, may resample within one month (66264.98(k)(3))

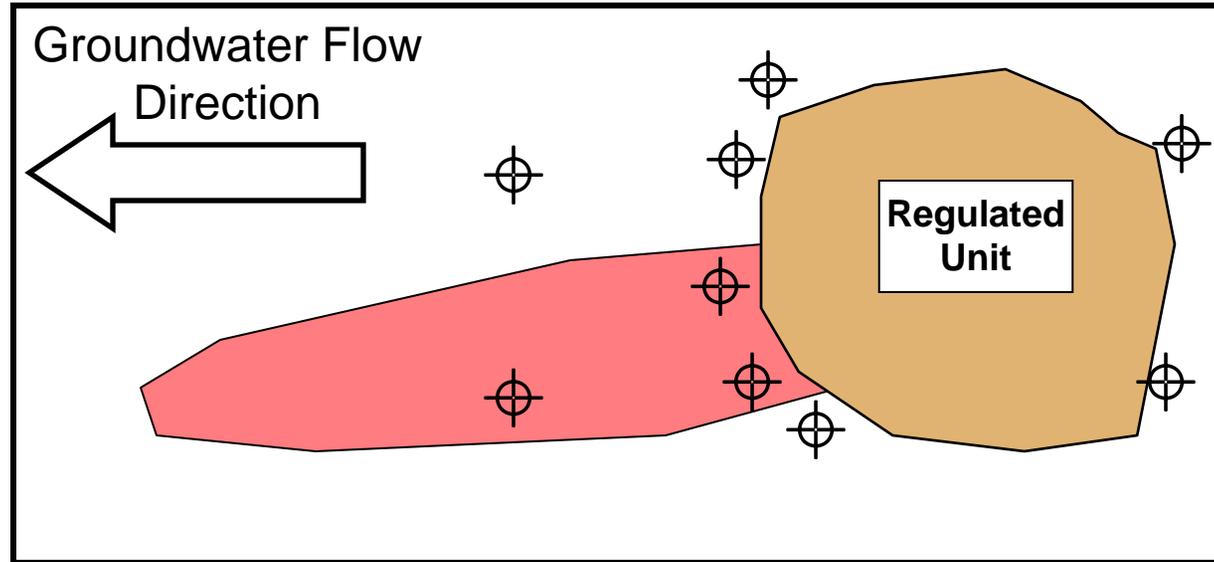
CURRENT MONITORING REGULATIONS

EVALUATION MONITORING PROGRAM

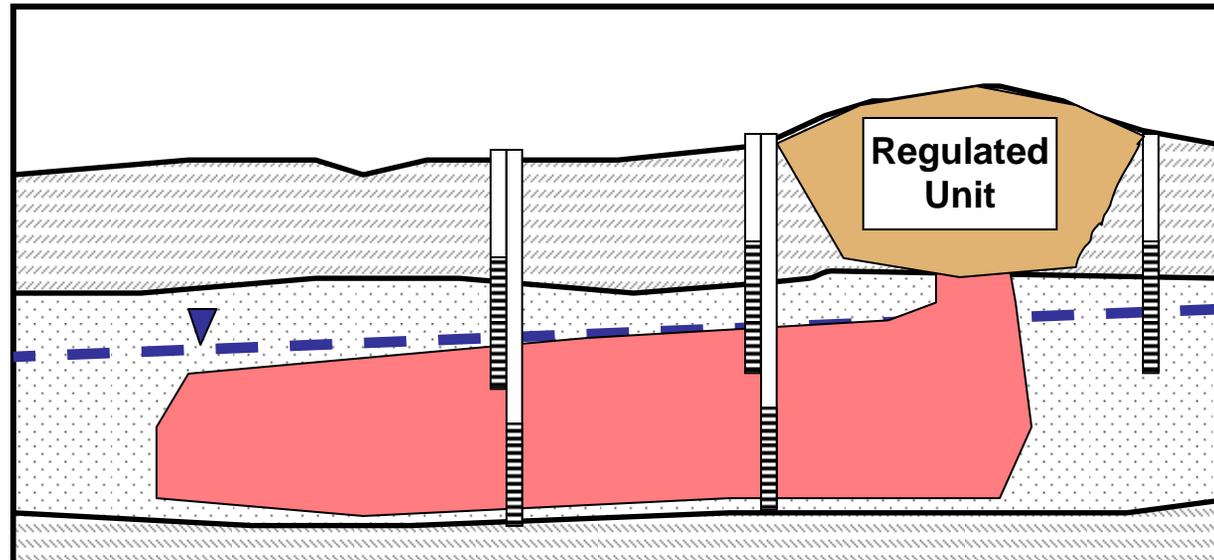
**Establish the Nature and Extent of a
Release of Hazardous Waste**

EVALUATION MONITORING

MAP VIEW



CROSS SECTION VIEW



CURRENT MONITORING REGULATIONS

EVALUATION MONITORING PROGRAM:

- **Delineate release both vertically and horizontally (new monitoring wells)**
- **Analyze groundwater annually for Appendix IX constituents (add new constituent to routine monitoring)**
- **Submit engineering feasibility study for corrective action**

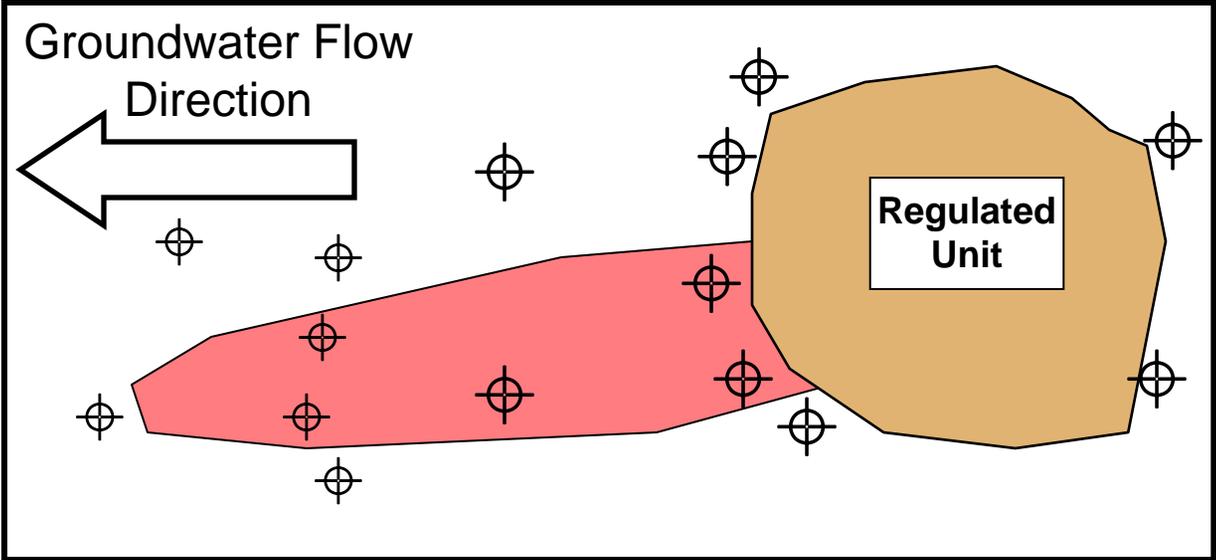
CURRENT MONITORING REGULATIONS

CORRECTIVE ACTION MONITORING PROGRAM

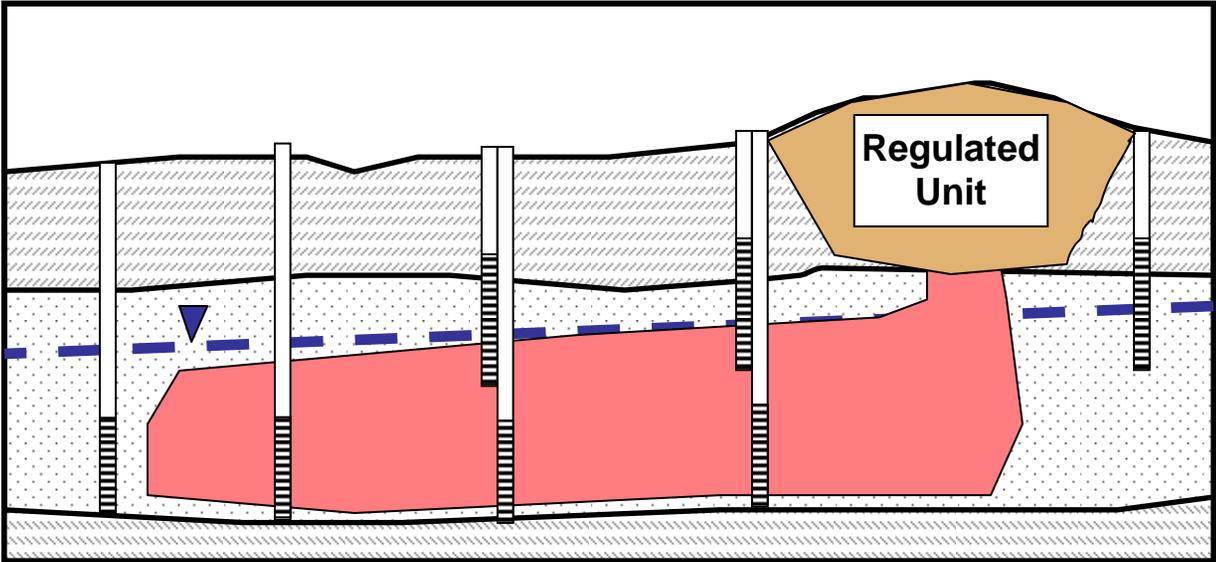
**Monitor the Cleanup of a Release of
Hazardous Waste**

CORRECTIVE ACTION MONITORING

MAP VIEW



CROSS SECTION VIEW



CURRENT MONITORING REGULATIONS

CORRECTIVE ACTION MONITORING PROGRAM:

- **Monitors the effectiveness of the cleanup**
- **Monitoring requirements may be based on the requirements of an evaluation monitoring program**
- **Monitoring is required throughout the zone affected by the release**

OVERVIEW OF PROPOSED CHANGES

- **Streamline Water Monitoring Requirements for “Regulated Units”**
- **Changes Allow for Alternative Requirements for Commingled Plumes from Regulated Units and Non-Regulated Units (§66264.90 and §66265.90)**

Any Alternative Program Must Be Protective of Human Health and the Environment

REVISIONS FOR REGULATED UNITS

MINOR CHANGES

- **Typographical errors**
- **§66264.97(b)(3) & §66265.97(b)(3):**
Amends outdated well report submission language
- **§66264.97(e)(4):**
Ensures proper implementation of monitoring
- **§66264.97(e)(9)(E) & §66265.97(e)(9)(E):**
Deletes reference to outdated values for establishing accuracy and precision limits

REVISIONS FOR REGULATED UNITS

§66264.97(e)(13) & §66265.97(e)(13):

Allows groundwater field parameter determinations to be modified or waived

- **Representative samples must be obtained**
- **Only allowed after DTSC approval**
- **Modifications shall be specified in plans**

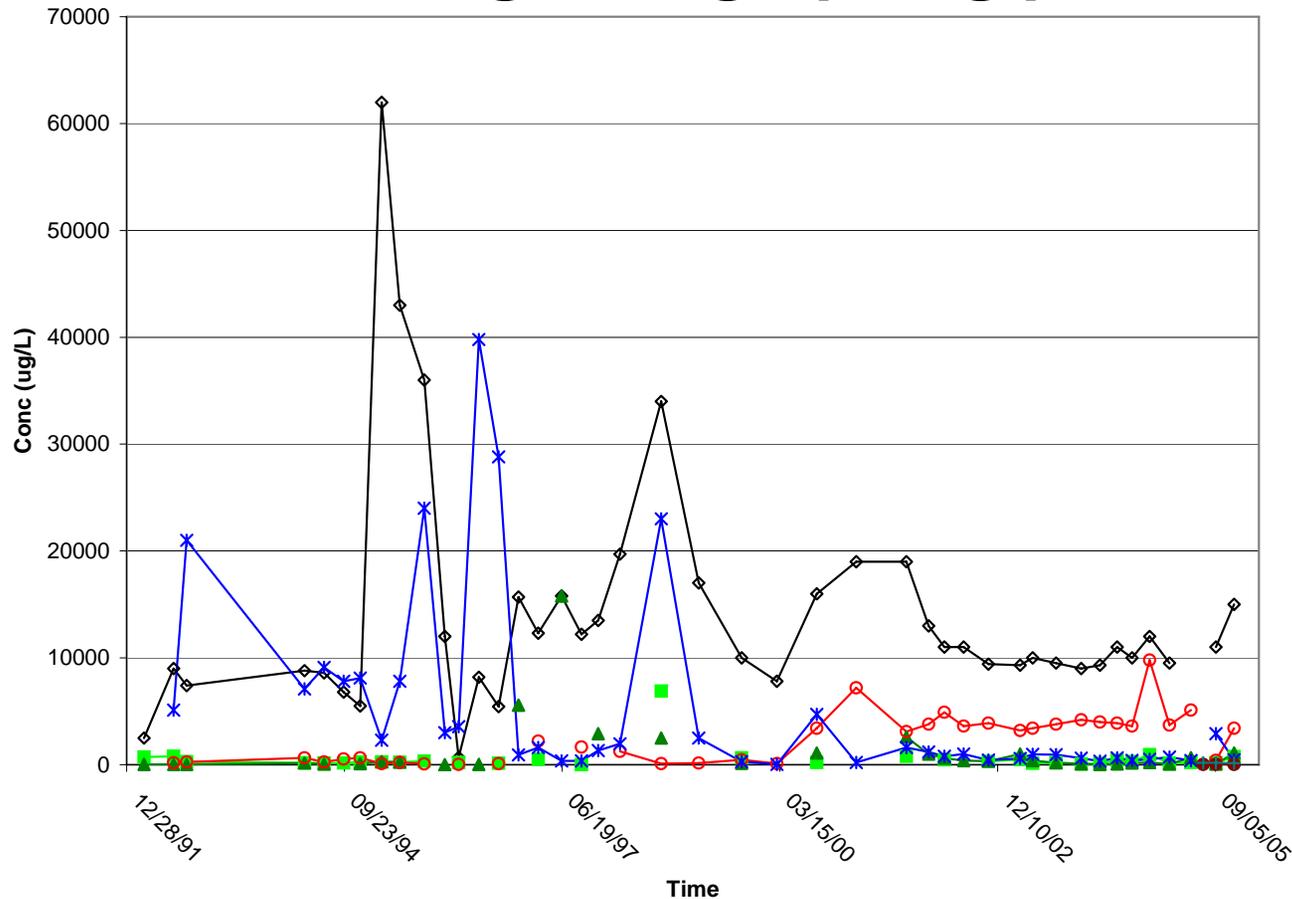
§66264.100(h):

Corrective action reporting at least annually

REVISIONS FOR REGULATED UNITS

§66264.97(e)(14) & §66265.97(e)(14):

Amends existing data graphing procedures





REVISIONS FOR REGULATED UNITS

§66264.97(b)(8)
§66265.97(b)(8)

New groundwater well
destruction standard



REVISIONS FOR REGULATED UNITS

Sampling at the times of expected highest and lowest annual groundwater surface elevations

Background §66264.97(e)(6) & §66265.97(e)(6)

Detection §66264.98(f) & §66265.98(g)

Evaluation §66264.99(e)(3) & §66265.99(e)(3)

Water Levels §66264.97(e)(15) §66265.97(e)(15)

REVISIONS FOR REGULATED UNITS

**§66264.97(e)(15): Water Level Monitoring Frequency.
May be based on site specific conditions**

**§66264.97(e)(12)(B)2: Allows for alternate sampling
and analysis frequencies**

**§66264.99(e)(6) & 66265.99(e)(6):
May modify the number of Appendix IX constituents**

**§66264.98(k)(1), § 66264.98(k)(2), §66264.98(k)(3)
§66265.98(l)(1), § 66265.98(l)(2), §66265.98(l)(3):
May modify the number of sampling locations and
analytes required after a release is detected**

REVISIONS FOR REGULATED UNITS

**§66264.97(c)(3) & §66265.97(c)(3):
May modify or exclude surface water
monitoring standards if impracticable or
technically inappropriate**



REVISIONS FOR REGULATED UNITS

Unsaturated Zone Monitoring

§66264.97(d)(7) & §66265.97(d)(7):

May modify or exclude unsaturated zone monitoring standards if impracticable or technically inappropriate

§66264.97(d)(4) & §66265.97(d)(4):

No longer mandates lysimeters for unsaturated zone monitoring if they won't provide useful information

§66264.97(d)(5) & §66265.97(d)(5): (old units)

Unsaturated zone monitoring not required if it would not provide useful information regarding a release

REVISIONS FOR REGULATED UNITS

§66264.98(o), §66264.99(j) and §66265.100(k): Allows for Supplemental Groundwater Monitoring with Alternative Requirements

The Department shall specify any supplemental Groundwater monitoring requirements in the facility permit for each groundwater quality monitoring program developed to satisfy section 66264.98. Supplemental monitoring shall, at a minimum, comply with the requirements listed in sections 66264.90g(2) through 66264.90(j).

REVISIONS FOR REGULATED UNITS/ COMMINGLED PLUMES

§66264.90g(2) through 66264.90(j)

(g) May replace all or part of the water quality monitoring and response program requirements with alternative requirements if:

(g)(2) The alternative requirements will protect human health and the environment.

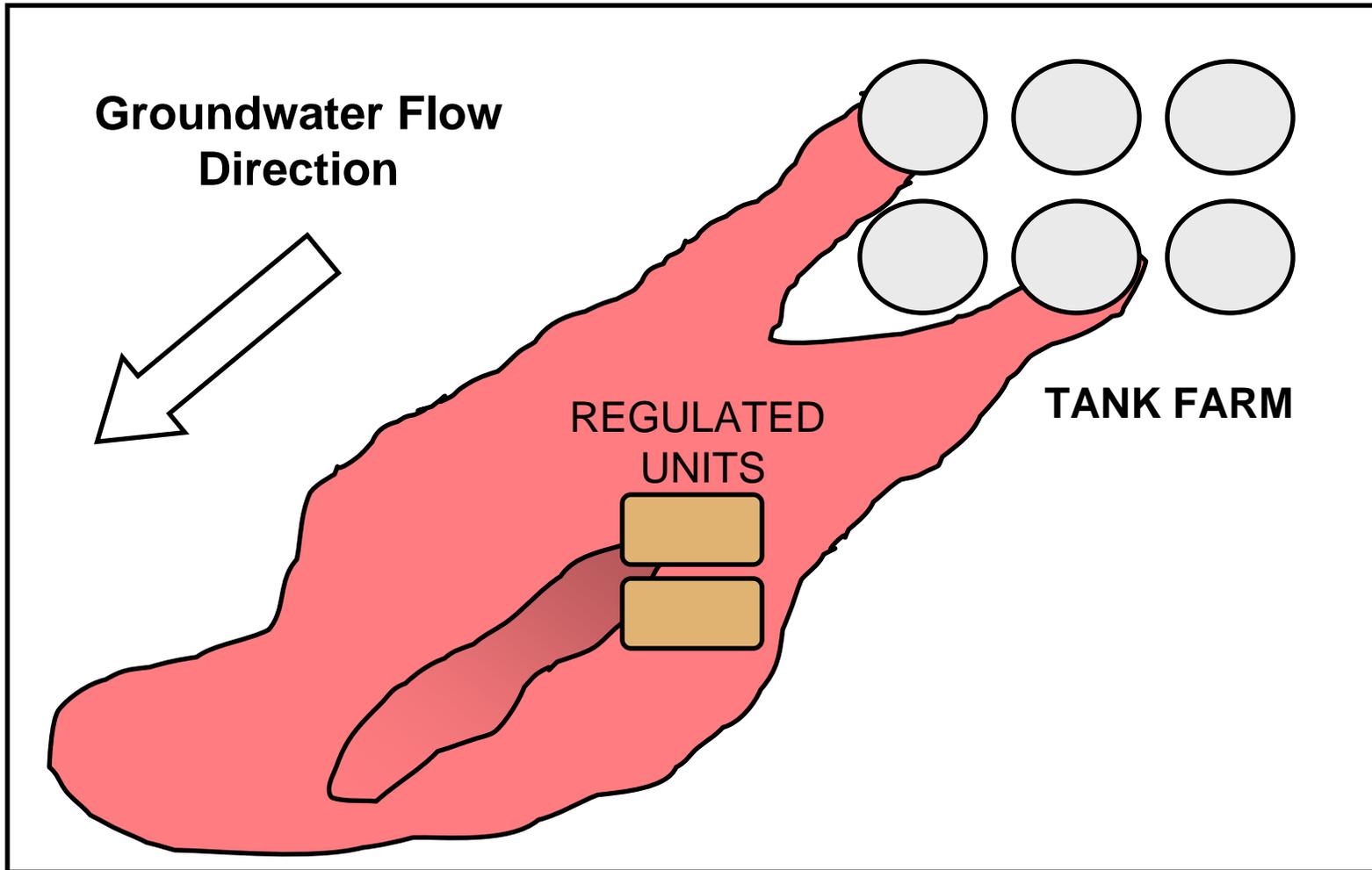
(h) A facility is not relieved of any requirements until the Department provides written approval of a report demonstrating that proposed changes are justified.

REVISIONS FOR REGULATED UNITS/ COMMINGLED PLUMES

§66264.90g(2) through 66264.90(j) (continued)

- (i) If alternative requirements do not adequately protect human health and the environment, the facility shall make appropriate changes to the program.
- (j) The Department may require that certain requirements of §§ 66264.91 through 66264.100 be reinstated in whole or part if alternative requirements do not adequately protect human health and the environment.

COMMINGLED PLUMES



Petroleum Refinery Example

REVISIONS FOR COMMINGLED PLUMES

- **Alternative requirements; use other programs, such as:**
 - RCRA Corrective Action (HSC Chapter 6.5)
 - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (HSC Chapter 6.8)
 - Regional Water Quality Control Board Title 23
- **Eliminate duplicative monitoring programs**
- **Less prescriptive**
- **Must protect human health and environment**

IMPLEMENTATION OF CHANGES

PERMITTED FACILITY

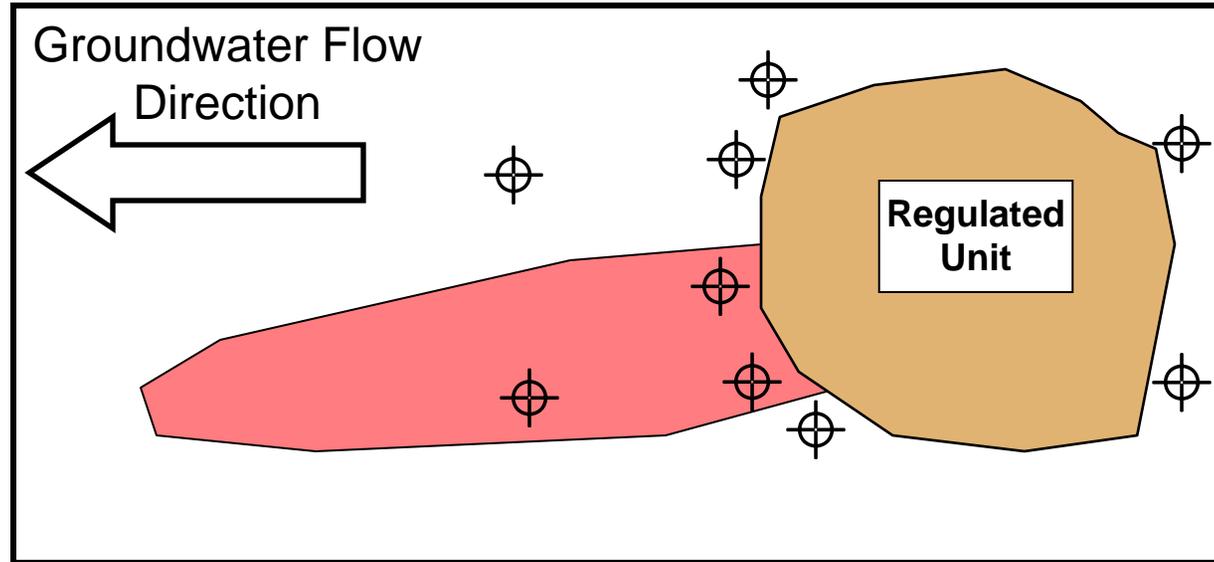
Permit Modification Process

INTERIM STATUS FACILITY (NO PERMIT)

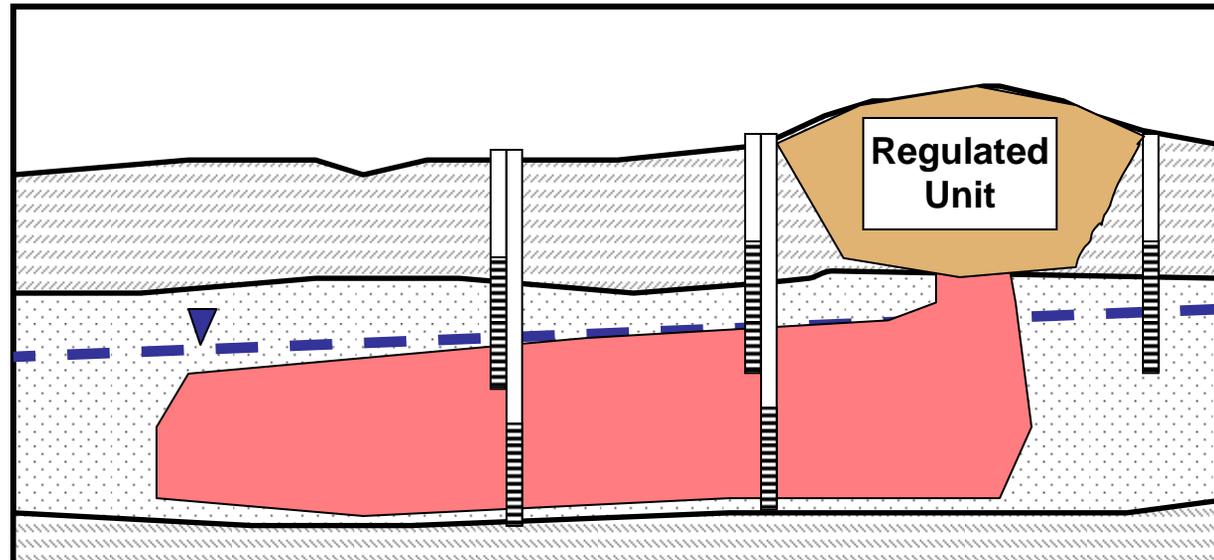
Inactive: Submittal of Revised Sampling
and Analysis Plan

CASE STUDY 1: ISOLATED UNIT

MAP VIEW



CROSS SECTION VIEW



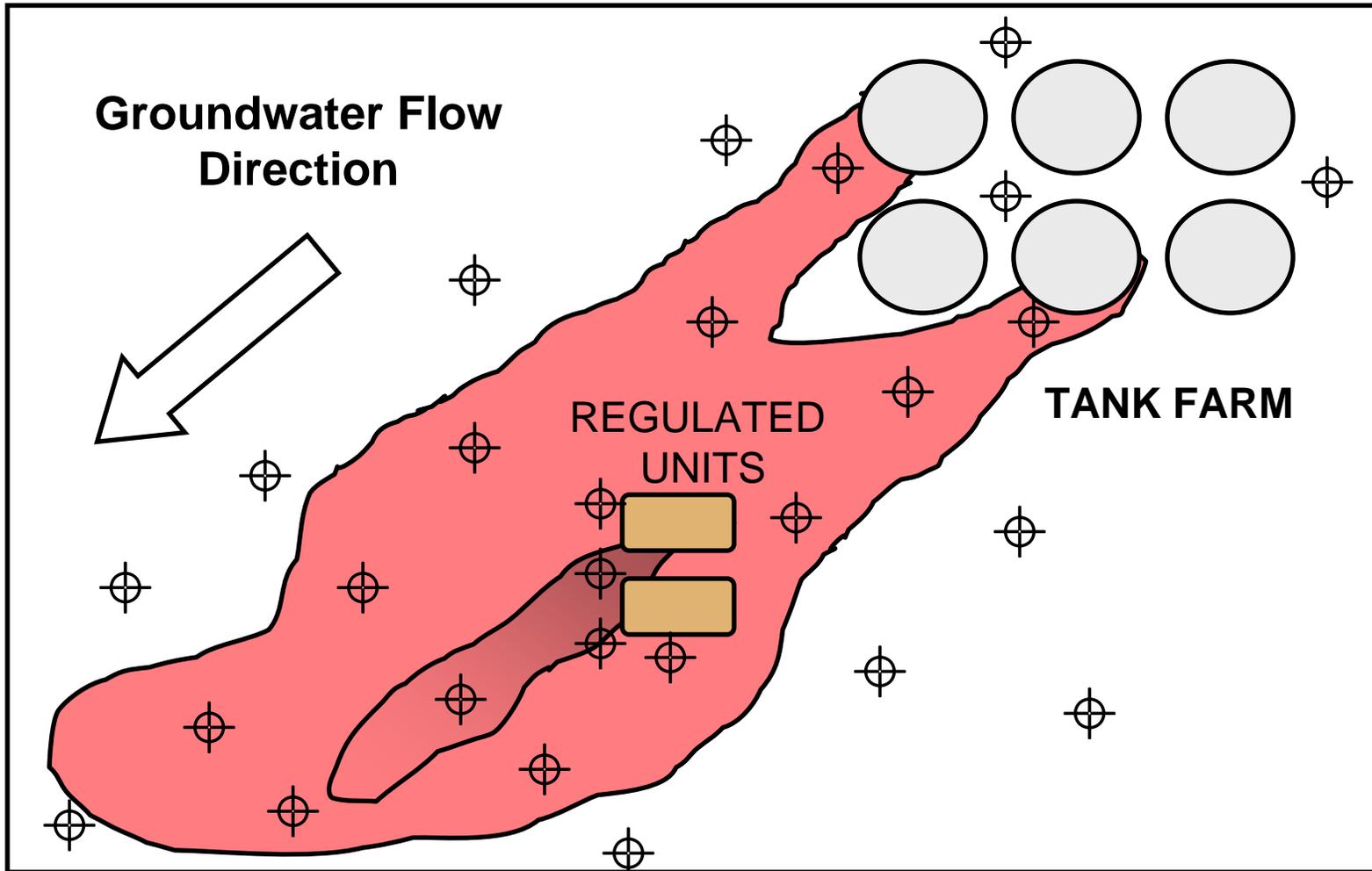
CASE STUDY 1: ISOLATED UNIT

Changes Will Allow Modification of Requirements Based on Site-Specific Conditions

- **Less frequent water level measurements and water quality sampling**
- **Modify number of sampling points and chemical analyses during confirmation process**
- **Reduce the number of Appendix IX analytes**
- **Reduce the number of field parameter measurements**

CASE STUDY 2

COMMINGLED PLUMES



Petroleum Refinery Example

CASE STUDY 2

COMMINGLED PLUMES

- **Can adopt a site-wide monitoring program**
- **Could combine the two separate monitoring programs into one regulatory program**

**Any Alternative Program Must Be
Protective of Human Health and the
Environment**

MONITORING REVISION WORKSHOP

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REGULATORY CONCEPT WORKSHOP: YOUR COMMENTS

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- **Written comments due April 30, 2007**