Florida Department of
Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

September 10, 2010

Kelly Frasco
Carus Corporation
315 Fifth Street
Peru, Illinois 61354

Re: **Stimulox® Aerobic Bioremediation Product**

Dear Ms. Frasco:

The Division of Waste Management (Division) hereby accepts Stimulox® Aerobic Bioremediation Product, a proprietary blend of peroxygen chemicals and nutrients that stimulate in situ natural aerobic degradation of petroleum hydrocarbons, suitable chlorinated compounds, and other suitable contaminants in groundwater. It slowly dissolves to produce a long term source of oxygen, nitrogen, phosphate, potassium and other nutrients needed to naturally degrade contaminants.

Stimulox® is not a bulk chemical oxidation product, but it does support passive chemical oxidation by using the alkalinity of some of its ingredients to serve as a catalyst to produce oxidizing radicals from others. The rate at which radical production and chemical oxidation occurs is not so fast as to produce an increase in temperature or observable offgas. Regardless of whether the destruction of contaminants is accomplished biotically or abiotically by Stimulox®, the ultimate degradation products are the same: carbon dioxide and water, and chloride in the case of chlorinated compounds. A proprietary information voucher for Stimulox® is provided as Enclosure 1; regulatory information as Enclosure 2; supplemental information as Enclosure 3; and Underground Injection Control notification as Enclosure 4.

The Division of Waste Management does not provide endorsement of specific or brand name remediation products or processes. It does, however, recognize the need to determine their acceptability in the context of environmental regulations, safety, and the protection of public health. For that reason, the Division issues an "acceptance" letter, not an approval. In no way shall an acceptance be construed as certification of performance, nor shall it be construed as approval for uses that are beyond the jurisdiction of the Division of Waste Management. Additionally, vendors, upon receipt of an acceptance, must market their product or process on its own merits regarding performance, cost, and safety in comparison to competing alternatives in the marketplace.

Remedial Action Plans that propose the use of an accepted product or process should include a copy of the acceptance letter in its entirety in the plan's appendix, and reference it in the text of the document. It is not a requirement that a particular remediation product or process have an official acceptance letter in order for it to be proposed in a site-specific Remedial Action Plan. The plan, however, must contain sufficient information about the product or process to show that it meets all applicable rules and regulations.

The Division reserves the right to revoke its acceptance of a product or process if it has been falsely represented. Additionally, Division acceptance of any product or process does not imply it has been deemed applicable for all cleanup situations, or that it is preferred over other treatment or cleanup techniques in any particular case. A site-specific evaluation of applicability and cost-effectiveness must be considered for any product or process, whether conventional or innovative, and adequate site-specific design details must be provided in a Remedial Action Plan submitted for Department review and approval. Questions about hazardous waste cleanup applications should be directed to Gary Millington, and questions about petroleum cleanup applications should be directed to Rick Ruscito.

Sincerely,

Gary Millington, P.E.
Division of Waste Management
Bureau of Waste Cleanup
Program and Technical Support Section
gary.millington@dep.state.fl.us
(850) 245-7502

Rick Ruscito, P.E.
Ecology and Environment, Inc.
Bureau of Petroleum Storage Systems
Petroleum Cleanup Section 6
rruscito@ene.com
(850) 877-1133, extension 3722

Enclosures: (1) Proprietary Information Voucher for Stimulox®
(2) Regulatory Information
(3) Supplemental Information
(4) Underground Injection Control Notification Memorandum

c: Tom Conrardy - FDEP/Tallahassee
Rob Cowdery – FDEP/Tallahassee

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ENCLOSURE 1

PROPRIETARY INFORMATION VOUCHER

Florida Department of Environmental Protection

Bob Martinez Center
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September 10, 2010

Kelly Frasco
Carus Corporation
315 Fifth Street
Peru, Illinois 61354

Re: **Proprietary Information Voucher for Stimulox® Aerobic Bioremediation Product**

Dear Ms. Frasco:

On May 3, 2010 the Division of Waste Management received from Carus Corporation an application dated April 28, 2010 for the evaluation of Stimulox® as an innovative remediation technology. Part 2 of the application included a confidential one-page full disclosure of all Stimulox® ingredients and their exact proportions. The full disclosure provided for the purpose of a regulatory comparison to groundwater and underground injection requirements of the Florida Administrative Code is a more detailed version of Carus Corporation's publicly available Material Safety Data Sheet Number CP-1003, which sufficiently characterizes the product but withholds the identify of some proprietary ingredients, and preserves the proprietary proportions of ingredients by providing a range of values instead of exact proportions.

The Division of Waste Management has reviewed and hereby vouches for the content of the full confidential disclosure. The disclosure, having been made once, does not have to be repeated each time a site-specific Remedial Action Plan proposing the use of Stimulox® is submitted. Instead, it will suffice hereafter for site-specific Remedial Action Plans to: (1) indicate the overall concentration of Stimulox® in the fluid to be injected; (2) indicate the volume of the fluid to be injected; (3) include a copy of the acceptance letter, which includes this voucher, and (4) provide for groundwater monitoring of the chemical species and parameters associated with Stimulox® in the temporary injection zone of discharge per the advice of this letter.

Per publicly available Material Safety Data Sheet Number CP-1003, the ingredients and their proportions in dry Stimulox® powder, expressed as a weight percent, are as follows: calcium peroxide, 1-40%; dipotassium peroxodisulfate, 1-40%; diammonium peroxodisulfate, 1-40%; and other ingredients, 1-40%. The powder is only slightly soluble in water, and a saturated solution has a pH of 10. Due to the low solubility, aqueous mixtures of Stimulox® will be applied as slurry, not a fully-dissolved solution.

Questions about hazardous waste cleanup applications of Stimulox® should be directed to Gary Millington, and questions about petroleum cleanup applications should be directed to Rick Ruscito.

Sincerely,

Gary Millington, P.E.
Division of Waste Management
Bureau of Waste Cleanup
Program and Technical Support Section
gary.millington@dep.state.fl.us
(850) 245-7502

Rick Ruscito, P.E.
Ecology and Environment, Inc.
Bureau of Petroleum Storage Systems
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REGULATORY INFORMATION

a. Regulations: Chapters of the Florida Administrative Code (F.A.C.) that may be applicable, either in part or in their entirety, include but are not necessarily limited to Chapter 62-550, F.A.C., for primary and secondary water quality standards; Chapter 62-520, F.A.C. for groundwater classes and standards; Chapter 62-520, F.A.C., for groundwater permitting and monitoring requirements; Chapter 62-528, F.A.C., for underground injection control, particularly Part V, for Class V, Group 4 aquifer remediation projects; Chapters 62-770, 62-780, 62-782, and 62-785, F.A.C., for cleanup criteria; and Chapter 62-777, F.A.C., for cleanup target levels.

   Users of Stimulox® shall comply with all applicable regulations. This includes meeting applicable groundwater cleanup target levels for the contaminants of concern, the residual concentrations of Stimulox® ingredients, and any byproducts of concern produced by chemical and biological reactions induced by the ingredients during the timeframe of the cleanup project. For the "ingredients of concern" in Stimulox® that are present in excess of their groundwater standards, the timeframe is that which is permitted for a temporary injection zone of discharge.

b. Underground Injection Control permit: Per Rule 62-528.630(2)(c), F.A.C., Class V injection-type aquifer remediation wells are exempt from the permitting requirements of Rule 62-528.635, F.A.C., when authorized by a Department-approved Remedial Action Plan or other enforceable mechanism, provided the requirements of the rules governing the remediation project, as well as the construction, operation, and monitoring requirements of Chapter 62-528, F.A.C., are met. Per Rule 62-528.630(2)(c), F.A.C., the issuance of an enforceable, site-specific Remedial Action Plan Approval Order by the Department for injection-type aquifer remediation constitutes the granting of a Class V injection well construction/clearance permit.

c. Underground Injection Control notification: Remedial Action Plans proposing in situ, injection-type aquifer remediation shall include information pursuant to Rules 62-528.630(2)(c)1 through 6, F.A.C., for the inventory purposes of the Underground Injection Control program. Reviewers of those plans, upon issuance of an enforceable Remedial Action Plan Approval Order by the Department, must submit a completed copy of the Underground Injection Control inventory notification memorandum in Enclosure 4.

d. General information about temporary injection zones of discharge: For in situ aquifer remediation, the composition of an injected fluid must meet the primary and secondary drinking water standards set forth in Chapter 62-550, F.A.C., and the general minimum groundwater criteria of Chapter 62-520, F.A.C., pursuant to underground injection control Rule 62-528.600(2)(d), F.A.C. Additional minimum groundwater criteria for specific chemicals are set forth in Chapter 62-777, F.A.C. Aquifer remediation fluids that do not meet these requirements must seek permission for a temporary injection zone of discharge. Depending on the chemical composition and the physical properties of the fluid, it will be necessary to obtain permission for an injection zone of discharge by either one or both of the following methods: by Rule 62-520.310(8)(c), F.A.C., or by variance from Rule 62-520.310(9), F.A.C.

   Rule 62-520.310(8)(c), F.A.C., allows a temporary injection zone of discharge for closed-loop re-injection systems, the prime constituents of the reagents used to remediate site contaminants, and the secondary standards for groundwater, provided a Department-approved remedial action plan addresses the duration and size of the zone of discharge, and groundwater monitoring of the injected chemical species of concern.

In order to obtain permission for a temporary zone of discharge by way of Rule 62-520.310(8)(c), F.A.C., a site-specific Remedial Action Plan must indicate: (a) the chemical species of concern in the fluid to be injected that will be present in excess of their allowable concentrations; (b) the size of the zone that is needed; (c) the amount of time that the zone will be needed; and (d) a groundwater monitoring plan for the injected chemical species of concern. In most cases, monitoring on a quarterly basis should be sufficient. The size of the temporary injection zone of discharge in item (b) above will usually be the radius of influence when the treatment system is a single injection point. For a multiple point system, the zone of discharge can usually be expressed and illustrated as the total area of the cluster formed by all the injection points, located side-by-side with overlapping radii of influence.

e. Specific zone of discharge (ZOD) information for Stimulox®: The Division of Waste Management, using information provided by CARUS Corporation, has done dilution calculations in order to create Table 1 below. Use the table to identify the mechanism by which to obtain permission for a temporary injection zone of discharge and the parameters to be monitored in the groundwater. For the injection of Stimulox® slurry at concentrations less than 1.98 percent by weight, ZOD permission can be obtained solely by way of Rule 62-520.310(8)(c), F.A.C., but for concentrations equal to or greater than 1.98 percent, ZOD permission must be obtained by way of both this rule and a variance.

   Per Table 1, ZOD permission by way of Rule 62-520.310(8)(c), F.A.C., can be obtained for as many as 9 parameters associated with the use of Stimulox®, depending on its concentration in the slurry to be injected, and whether the contaminants at the remediation site include chlorinated compounds. The parameters are aluminum, ammonia, nitrate (a degradation product of ammonia), iron, pH, sulfate, total dissolved solids, zinc, and chloride (if the concentration of chlorinated contaminants at the remediation site is high enough to produce more than 160 mg/L of chloride as a degradation by-product). For these parameters, the issuance of the site-specific Remedial Action Plan Approval Order constitutes the granting of permission by way of Rule 62-520.310(8)(c), F.A.C., for the temporary injection zone of discharge.

   For the injection of Stimulox® slurry at concentrations equal to or greater than 1.98 percent by weight, Rule 62-520.310(8)(c), F.A.C., still applies to the 9 parameters listed above, but a variance from Rule 62-520.310(9), F.A.C., that grants permission for a temporary injection zone of discharge for as many as 8 trace metals is also necessary. The 8 metals are antimony, barium, beryllium, cadmium, chromium, nickel, selenium and sodium. Therefore, for the injection of a typical Stimulox® slurry in the concentration range of 30-60%, permission for the ZOD must be obtained by way of both the rule and a variance.

f. Utilization of wells: If a remediation site happens to have an abundance of monitoring wells, then the Division has no objection to the use of some wells for the injection of remediation products. However, no "designated" monitoring well, dedicated to the tracking of remediation progress (by sampling) shall be used to inject remediation products. This will avoid premature conclusions that the entire site meets cleanup goals. By making sure that designated tracking wells are not also used as treatment points, there will be more assurance that the remediation products have permeated the entire site and that it did not remain localized to the area immediately surrounding each injection well. In the case of Stimulox® though, it is less likely that an existing monitoring well will suitable for use as an injection point, since the relatively fine well screen may not easily allow a typical 30-60% Stimulox® slurry to pass. For that reason, it is anticipated that direct-push technology will be the preferred method of Stimulox® injection.

g. Avoidance of migration: For injection-type, in situ aquifer remediation projects, pursuant to Rule 62-528.630(3), F.A.C., injection of Stimulox® shall be performed in such a way, and at such a rate and volume, that no undesirable migration of either the Stimulox® or the contaminants of concern in the aquifer results.

h. Abandonment of wells: Upon issuance of a Site Rehabilitation Completion Order, injection wells shall be abandoned pursuant to Section 62-528.645, F.A.C., and the Underground Injection Control Section of the Department shall be notified so that the treatment wells can be removed from the injection well inventory-tracking list.

i. Open-pit applications: While open-pit application of Stimulox® is not an injection-type application, and notification of the Underground Injection Control Section therefore not required, the user must still be mindful of groundwater quality. For open-pit applications, the Division of Waste Management suggests that groundwater in the application area be sampled for the same parameters that would have been monitored had the application been an injection.

Table 1. Temporary Injection Zone of Discharge Monitoring Parameters for Concentrations of Stimulox in the Slurry to be Injected

Parameter	0.01 wt% or greater	0.04 wt% or greater	0.08 wt% or greater	0.10 wt% or greater	0.15 wt% or greater	0.24 wt% or greater	1.98 wt% or greater	3.27 wt% or greater	3.53 wt% or greater	4.1 wt% or greater	4.9 wt% or greater	6.02 wt% or greater	13.36 wt% or greater	13.78 wt% or greater	81.74 wt% or greater	Mechanism by which to obtain zone of discharge (ZOD) permission for this parameter, and its classification for ZOD purposes.		Florida Groundwater Standard
pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Rule 62-520.310(8)(c)	Sec. GW	6.5-8.5
Ammonia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Rule 62-520.310(8)(c)	Prime Constituent of a Reagent	2.8 mg/L
Nitrate (Note 7)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	Rule 62-520.310(8)(c)	Degradation product of a prime constituent of a reagent.	10 mg/L (as N)
Sulfate			X	X	X	X	X	X	X	X	X	X	X	X	X	Rule 62-520.310(8)(c)	Sec. GW	250 mg/L
Total Dissolved Solids				X	X	X	X	X	X	X	X	X	X	X	X	Rule 62-520.310(8)(c)	Sec. GW	500 mg/L
Aluminum					X	X	X	X	X	X	X	X	X	X	X	Rule 62-520.310(8)(c)	Sec. GW	0.2 mg/L
Iron						X	X	X	X	X	X	X	X	X	X	Rule 62-520.310(8)(c)	Sec. GW	0.3 mg/L
Antimony							X	X	X	X	X	X	X	X	X	Variance	Primary GW Impurity	0.006 mg/L
Beryllium								X	X	X	X	X	X	X	X	Variance	Primary GW Impurity	0.004 mg/L
Nickel									X	X	X	X	X	X	X	Variance	Primary GW Impurity	0.1 mg/L
Selenium										X	X	X	X	X	X	Variance	Primary GW Impurity	0.05 mg/L
Chromium											X	X	X	X	X	Variance	Primary GW Impurity	0.1 mg/L
Cadmium												X	X	X	X	Variance	Primary GW Impurity	0.005 mg/L
Sodium													X	X	X	Variance	Primary GW Impurity	160 mg/L
Barium														X	X	Variance	Primary GW Impurity	2 mg/L
Zinc															X	Rule 62-520.310(8)(c)	Sec. GW	5 mg/L
Chloride (Note 8)																Rule 62-520.310(8)(c)	Degradation product of a site's chlorinated hydrocarbon contaminants of concern.	250 mg/L

Table 1 (continued)
Abbreviations and notes:
(1) mg/L = milligrams per liter
(2) Primary GW Impurity = A chemical species listed as a primary drinking water contaminant in Chapter 62-550, F.A.C., that is present in Stimulox as an impurity.
(3) Sec. GW = A chemical species listed as a secondary drinking water contaminant in Chapter 62-550, F.A.C., that is present in Stimulox as either an impurity or a prime constituent of a reagent needed to remediate a site's contaminants.
(4) A conservative approach has been taken by the Division of Waste Management in identifying the chemical species in Stimulox for which permission for a temporary injection zone of discharge (ZOD) should be obtained. Even though Stimulox will be applied as a slurry (in which not all chemical species may be totally dissolved) it has been conservatively assumed for regulatory ZOD puposes that all chemical species present are totally dissolved and available for mixing with the receiving groundwater.
(5) For the injection of Stimulox as a 30-60% slurry by weight, ZOD permission is required for all parameters in this table, with the exception of zinc, which does not require permission until an unlikely 81.74% slurry is injected.
(6) Carus Corporation indicates that the upper control limit for each of the following trace metals present in Stimulox is based on six (6) standard deviations: aluminum, antimony, barium, beryllium, cadmium, chromium, copper, iron, nickel, selenium and sodium.
(7) Nitrate is not a Stimulox ingredient but rather a degradation product of ammonia. The Division of Waste Management therefore, from a conservative regulatory standpoint, requests that the concentration of nitrate be monitored in the groundwater zone of discharge.
(8) Chlorides are not an ingredient of Stimulox but rather a degradation product of a site's chlorinated contaminants of concern. If the concentration of chlorinated contaminants in the area to be treated with Stimulox has the potential to produce more than 160 mg/L of chloride as a degradation product, then its concentration should be monitored in the groundwater zone of discharge.

SUPPLEMENTAL INFORMATION

a. Pilot study: For petroleum cleanup, per Rule 62-770.700(2), F.A.C., it is required that a pilot study proposal be submitted for review, and that a pilot test be performed prior to the design of a full-scale treatment system. If conditions at a site do not warrant a pilot study, then a proposal explaining the rationale to forego it must be submitted for review.

b. Dosage: Carus Corporation provides software to its customers to estimate the amount of Stimulox® needed to remediate a site, using as key inputs the concentrations of dissolved and adsorbed contaminants of concern, iron, manganese, and the chemical oxygen demand (or alternatively the biological oxygen demand). The Stimulox® demand is 9.7 times that of the oxygen demand. As with any remediation product, the Division of Waste Management advises that the applied dose be no greater than necessary, in order to minimize the risk that the period of time associated with the temporary injection zone of discharge will expire before the residual concentrations of the product's "ingredients of concern" have fully returned their groundwater standards or their natural-occurring background levels at the site, whichever is less stringent.

c. Delivery: The use of direct-push technology is preferred for the injection of Stimulox® since the relatively fine screen of permanent wells may offer too much resistance to the passage of a typical 30-60% Stimulox® slurry.

d. Working time: Carus Corporation indicates that users should mix no more than the amount of Stimulox® slurry that can be injected in 15-30 minutes, in order to avoid the risk of the material setting up and becoming solid.

e. Underground pipelines: Carus Corporation indicates that Stimulox®, due to its elevated pH, can be slightly corrosive to metal pipes, and as a safety precaution it should be injected several feet away from away from them.

f. Active life: Six (6) months can be used as the default value for the period of time during which Stimulox® produces oxygen for aerobic bioremediation, since studies to date have not yet thoroughly documented its service life and potential range of variability.

g. Limitations: Stimulox® is not recommended for the removal of free product, or injection into fractured rock.

Florida Department of

Memorandum — Environmental Protection

TO: Cathy McCarty, P.G.
Florida Department of Environmental Protection
Bureau of Water Facilities Regulation
Underground Injection Control Section - MS 3530
2600 Blair Stone Road, Tallahassee, FL 32399-2400

FROM: _____ (Note 1.)
_____
_____

DATE: _____

SUBJ: **Proposed Injection Well(s) for In Situ Aquifer Remediation at a Remedial Action Site**

Pursuant to paragraph 62-528.630(2)(c), F.A.C., inventory information is hereby provided regarding the proposed construction of temporary injection well(s) for the purpose of in situ aquifer remediation at a contaminated site.

Facility name: _____
Facility address: _____
City/County: _____
Latitude/Longitude: _____
FDEP Facility Number: _____

Facility owner's name: _____
Facility owner's address: _____
_____
_____
_____

Well contractor's name: _____ (Note 2.)
Well contractor's address: _____
_____
_____
_____

Facility name: _____
FDEP facility no.: _____

AFFECTED AQUIFER

Name of aquifer: _____
Depth to groundwater (feet): _____
Aquifer thickness (feet): _____
Areal extent of contamination (square feet): _____

INJECTION WELLS

A site map showing the location and spacing of injection wells, the areal extent of the groundwater contamination plume, and associated monitoring wells is attached. The injection well(s) features are summarized below, and/or a schematic of the injection well(s) is attached.

Direct-push or HSA/Mud rotary *(circle the appropriate well type)*
Diameter of well(s) (i.e., riser pipe & screen) (inches): _____
Total depth of well(s) (feet): _____
Screened interval: _____ to _____ feet below land surface
Grouted interval: _____ to _____ feet below land surface
Casing diameter, if applicable (inches): _____
Cased depth, if applicable: _____ to _____ feet below land surface
Casing material, if applicable: _____

PROJECT DESCRIPTION

The in situ, injection-type aquifer remediation product/process remediates contaminants by:
(check those that apply)

- ☐ bioremediation,
- ☐ chemical oxidation, or
- ☐ other (describe) _____

Brief description of the project:

_____

_____

Summary of major design considerations and features of the project:

Number of injection wells: _____
Injection volume per well (gallons): _____
Single or multiple injection events: _____
Injection volume total (all wells, all events): _____

Facility name: _____
FDEP facility no.: _____

FLUID TO BE INJECTED

Composition of injected fluid:
(ingredient, wt. %) (Note 3.): _____

_____

_____

_____

TEMPORARY INJECTION ZONE OF DISCHARGE (ZOD)

(check those that apply)

☐ No ZOD needed. The fluid to be injected meets the primary and secondary groundwater standards of Chapter 62-550, F.A.C., and the minimum groundwater criteria of Chapters 62-520 and 62-777, F.A.C.

☐ ZOD permission by rule 62-520.310(8)(c), F.A.C., for reagent chemical species and/or parameter(s) in the fluid to be injected (or re-injected) that exceed secondary groundwater standards. ZOD permission by this rule also applies to chemical species in the fluid to be injected that exceed primary groundwater standards or minimum groundwater criteria, provided those species are prime constituents of the reagents used to remediate site contaminants. The list of chemical species and parameters for which the approved Remedial Action Plan identifies zone size, duration and groundwater monitoring are as follows:

_____

_____

_____

☐ ZOD permission by rule 62-520.310(8)(c), F.A.C., for the following contaminants of concern that exceed their groundwater standards in the fluid to be re-injected as part of a closed-loop re-injection system for which the approved Remedial Action Plan identifies zone size, duration and groundwater monitoring:

_____

_____

_____

☐ ZOD permission by variance because fluid to be injected contains the following impurities that are not prime constituents of the reagents used to remediate the site's contaminants, and the concentration of those impurities in the fluid to be injected are in excess of their primary groundwater standards:

_____

_____

_____

☐ A variance needs to be granted before the remediation can be conducted.

☐ A variance has already been granted for the impurities listed above:

Date variance granted: _____ Zone size (feet): _____ Duration (time): _____

---------- ♦♦♦ ----------

☐ If ZOD permission by rule 62-520.310(8)(c), F.A.C., or by variance is checked above, then a figure that delineates the ZOD is attached, or ☐ the ZOD is described as follows:

_____

_____

Facility name: _____
FDEP facility no.: _____

CLEANUP CRITERIA AND ENFORCEABLE APPROVAL ORDER

In situ injection-type aquifer remediation of the contaminants of concern at this site is intended to meet the groundwater cleanup target levels established for them in accordance with applicable and appropriate chapters of the Florida Administrative Code and cited in the approved Remedial Action Plan. Additionally, all other groundwater standards will be met at the time of project completion for any residuals associated with the ingredients of the injected remediation products, and any by-products or intermediates produced as a result of the chemical or biochemical transformation of those ingredients or the contaminants of concern during their use. Applicable primary and secondary drinking water standards are set forth in Chapter 62-550, F.A.C., and additional groundwater quality criteria are set forth in Chapters 62-520 and 62-777, F.A.C.

The remediation plan estimates that site remediation will take _____ months. We will notify you if there are any modifications to the remediation strategy which will affect the injection well design or the chemical composition and volume of the injected remediation product(s).

The proposed remediation plan was approved on _____ by an enforceable approval order. A copy is attached. The remediation system installation is expected to commence within 60 days. Please call me at _____ if you require additional information.

##########

Note 1. This notification memorandum is primarily for use by state technical reviewers, but remediation contractors may fill in all blanks except those labeled "FROM" and "DATE" on page 1, and the "approval date", and "telephone number" blanks in the last paragraph on page 4. Those blanks are filled only by the regulator. In the case that the memorandum form is partially completed by the remediation contractor, the FDEP technical reviewer must verify that the information provided by the contractor is accurate and complete. Local programs are not authorized to approve underground injections into aquifers. Reason: Per agreement with EPA, the FDEP cannot delegate this authority. Local programs, after reviewing a Remedial Action Plan or an injection proposal document, should follow the instructions in the March 16, 2000, memorandum to arrange for Department headquarters' execution of an approval order, and then complete this memorandum.

Note 2. If an injection well installation contractor has not yet been selected, then indicate the name and address of the project's general remediation contractor/consultant.

Note 3. Complete chemical analysis of the fluid to be injected is required by Chapter 62-528, F.A.C. Some remediation products and processes may have already submitted this information at the time of application for acceptance by the Innovative Technology Acceptance Program. For those situations, when completing the Fluid To Be Injected section of this memorandum, it will suffice to indicate: (1) an Innovative Technology Acceptance letter has been issued; (2) the date of the acceptance letter; (3) the acceptance letter contains the chemical analysis, or a voucher for the confidential disclosure of the injected fluid's chemical composition if it is a proprietary formulation; and (4) the fluid will be injected at concentrations that are less than or equal to those cited in the acceptance letter. For products and processes that do not hold an Innovative Technology Acceptance letter, but for which the site-specific Remedial Action Plan provides a complete description of the chemical composition of the fluid to be injected, it will be necessary to enter this information into the Fluid To Be Injected section of this memorandum.