U.S. ENVIRONMENTAL PROTECTION AGENCY

SUPERFUND Explanation of Significant Differences

Chevron Chemical Company-Ortho Division

Orlando, Orange County, Florida

Introduction

On May 22, 1996, the United States Environmental Protection Agency (EPA) issued a Record of Decision (ROD) for the Chevron Chemical Company Site (Chevron Site) in Orlando, Florida, to address groundwater contamination resulting from past Site related activities. The ROD addressed groundwater contamination through Monitored Natural Attenuation (MNA), Institutional Controls (ICs), and also provided a contingency plan if MNA was determined to be insufficient to remediate the groundwater. Based upon recent groundwater data, it has been determined that the sole usage of MNA is no longer sufficient as a remedy for the Chevron Site. As such, the need to invoke the contingency plan of the ROD is necessary to achieve the cleanup levels for groundwater at the Site. In addition to invoking the contingency plan, this decision document will update the arsenic cleanup standard at the Site in order to maintain the protectiveness of the selected remedy. The arsenic cleanup standard for groundwater at the Site is being changed from a concentration of 50 ug/l to a concentration of 10 ug/l. Lastly, this decision document will clearly define the Remedial Action Objectives (RAOs) for the Site, which are intended to convey a general description of what the cleanup will accomplish. The inclusion of RAOs into the ROD is necessary, as these objectives are the benchmark for evaluating the success and effectiveness of the selected remedy.

In summary, this Explanation of Significant Differences (ESD) signifies a significant change to the selected remedy for the Chevron Site; documents the decision to update the Site's arsenic cleanup standard, clearly defines the RAOs for the Site, and implements the contingency plan as outlined in the 1996 ROD.

This ESD is being issued as part of EPA's public participation responsibilities under Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), 42 U.S.C. §§ 9601 et seq., and Section 300.435(c)(2)(i) of the National Contingency Plan (NCP), 40 C.F.R. Part 300.

The Administrative Record contains documents used as the basis for the remedy selected for the Site, including the ROD and Responsiveness Summary. This ESD will become part of the Administrative Record in accordance with 40 C.F.R. § 300.825(a)(2) of the NCP. The Administrative Record documents are available for public review and copying in the Chevron Site information repository located at the following locations:

Administrative Record and Information Repositories For the Chevron Superfund Site	
Orlando Public Library Edgewater Branch 6250 Edgewater Drive Orlando, Florida 32810	U.S. EPA - Region 4 Superfund Records Center 61 Forsyth St., SW Atlanta, GA 30303

Site Background

The Chevron Site is located at 3100 North Orange Blossom Trail (Highway 441) in Orlando, Florida. Land use in the area to the south and west of the Site is light industrial. The Armstrong Trailer Park was located directly to the north of the Site, and the Lake Fairview Commerce Center is located directly across Orange Blossom Trail to the east of the Site.

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The Site is 4.39 acres in size and is currently cleared, vegetated with grass, fenced, and unoccupied. Lake Fairview is approximately 700 feet northeast of the Site. Lake Fairview is a remnant karst lake, which is approximately 400 acres in size.

Operational History

The Chevron Chemical Company facility operated from 1950 to 1976 as a pesticide formulation plant. During that time, the facility received unblended products in bulk liquid and powder form, and blended the products to make pesticides and nutritional sprays for bulk wholesale distribution. The unblended products were shipped in primarily by rail, then formulated on-Site, packaged in drums, and shipped off-Site by truck. Pesticides formulation was discontinued in 1976, at which time Chevron removed the chemical inventory from the Site, drained the equipment lines and backfilled the rinsate ponds with soil.

In 1978, the facility property was sold to Central Florida Mack Trucks, a diesel truck sales, service and repair company. Body work and painting operations were also conducted at the Site. The facility generated waste oil and waste degreasing solvents.

In March 1984, during the operation of Central Florida Mack Trucks, a tanker truck (owned by Waste Management, Inc.) filled with 3% hydrochloric acid and an unknown amount of nitric acid was stored on Site for repair. The tanker leaked an estimated 3,000 to 6,000 gallons of acid, which resulted in an explosion in the vicinity of the western rinsate pond. Waste Management excavated the spill area and disposed of the contaminated soils.

Central Florida Mack Trucks discontinued its operations at the Site in November, 1986. The property was subsequently purchased in foreclosure by Chevron in 1993 who owns the property to this date.

Initial Response

From 1982 until 1989, several investigations were conducted to assess the conditions at the Site. The results of these studies indicated the presence of pesticides, volatile organic compounds (VOCs), and metals in the soil and/or groundwater.

As a result of these investigations, EPA and Chevron signed an Administrative Order on Consent (AOC) to further assess the Site and conduct a removal action in 1990. The removal action focused on the removal of material which could be a source of groundwater contamination or a risk to human health. This included the soil in the former rinsate pond area, soil along the railroad spur, and soil adjacent to the historic above ground storage tank area.

The Agency for Toxic Substances and Disease Registry (ATSDR) defined the removal action goals and cleanup levels for the soils on Site so as provide protection of human health through the inhalation and dermal contact routes of exposure. The ATSDR goals required removal of shallow soils (0- to 1-foot below land surface) with chlorinated pesticide concentrations in excess of 50 milligrams per kilogram (mg/kg), and removal of deeper soils (1-foot to the water table) with chlorinated pesticide concentrations in excess of 100 mg/kg. ATSDR recommended using chlordane as an indicator chemical, because chlordane was considered the most prevalent and most toxic compound to humans that was found in the highest concentrations at the Site.

In August 1991, Chevron obtained authorization to proceed with the removal action which was conducted from December, 1991 through September, 1992. During the removal action, all of the remaining structures were demolished and removed; 17,780 tons of pesticide-contaminated soil were excavated and properly disposed of off-Site; 4,900 tons of petroleum-contaminated soil were excavated and treated on the property; 90 to 100 gallons of a free-phase liquid were extracted from subsurface soils and disposed of off-Site; and 126,000 gallons of storm water and groundwater, recovered during the soil excavation, were treated and discharged into an infiltration trench on the property. All excavated areas were backfilled with clean soil and the property was graded and seeded.

In April 1993, Chevron and EPA entered into another AOC to conduct a remedial investigation and feasibility study (RI/FS) to evaluate groundwater contamination at the Site and potential soil contamination in the former Armstrong Trailer Park and areas of off-Site drainage. Soil sampling was conducted in two phases at the Armstrong Trailer Park. This prompted a subsequent removal action at the trailer park, conducted in March and April 1994. The soil cleanup level for this removal was set at 4.9 mg/kg of chlordane. Approximately 230 tons of contaminated soil were excavated from the trailer park.

Groundwater sampling was also conducted in phases during the RI. The first phase was conducted in April 1993 and consisted of sampling the nine existing monitoring wells. The second phase involved the installation and sampling of seventeen additional wells, conducted from September to October 1993.

Remedial Activities History

On May 22, 1996, EPA signed a ROD for the Chevron Site that documented the contamination at the Site and the selected cleanup method for the Site. A public meeting and thirty day public comment period were held prior to finalizing the ROD. EPA responded to all substantive public comments in a Responsiveness Summary, located at the end of the ROD. The major components of the selected remedy included:

- Monitored Natural Attenuation (MNA) of the groundwater until all cleanup levels are achieved.
- Deed restrictions/notices or Institutional Controls to prohibit consumption or use of contaminated groundwater until the cleanup standards have been met.
- Routine maintenance at the Site, including fence maintenance, grass mowing and other activities.
- A contingency plan to be implemented if;
    - Contaminant concentrations do not decrease by 10-15% within one year,
    - Monitored natural attenuation does not continue as expected, or
    - Organic contaminants are detected in either of the sentinel monitoring wells, MW-11 and MW-15

In the event that the contingency plan was triggered into action, the following measures were to be employed:

- Increased monitoring frequency
- Subsurface filter wall installation

In addition to the installation of the subsurface filter wall, the following options were made available for the purposes of controlling the migration of contamination.

- Limited air sparging,
- Hydraulic gradient control,
- Further source removal to be implemented, as necessary

Remedy Implementation

In July 1997, EPA issued an Unilateral Administrative Order directing Chevron to implement the remedy as selected in the 1996 ROD. A restrictive covenant was placed on the Chevron property in January 2000 as an IC to limit future use of the property to commercial/industrial uses and to prevent the drawing of groundwater for purposes other than monitoring. Fencing was also installed and Chevron regularly performs routine maintenance and general upkeep of the Site. Additionally, Chevron routinely monitors the groundwater to evaluate MNA and potential contaminant migration, and submits the results to EPA for review.

Contingency Trigger

As noted in the description of the major components of the 1996 ROD, one of the conditions which would trigger the implementation of the contingency was the detection of organic contaminants in sentinel monitoring wells MW-15 or MW-11. These two well clusters were installed between the Site and Lake Fairview to verify and ensure that contaminants were not migrating into or towards Lake Fairview.

In May 2004 a-BHC, an organic Site contaminant, was detected in MW-15, which was confirmed in May and July 2004. These detections triggered the implementation of contingency measures designed to address contaminant mobility within the groundwater plume. As such, the following actions were taken:

- Monitoring frequency in existing wells was increased from annually to quarterly,
- Additional monitoring wells were installed,
- A Permeable Reactive Barrier (PRB) pilot study was initiated to determine optimal arrangement and construction for the subsurface filter wall.
- Performance of a soil study was conducted to determine the level of residual contamination existing in on-Site soils.

Scope and Role of Action

The purpose of this ESD is to invoke the contingency and document significant changes to the remedy selected in the 1996 ROD for the Chevron Site. Due to the April 2004 detection of a-BHC in sentinel well MW-15, EPA and FDEP have concluded that Site contaminant mobility has not been adequately controlled, and implementation of the contingency remedy is warranted at this time. Specifically, the contingency measure to implement the installation of PRB walls, and the enhancement of the remedy through removal of additional contaminated source zone soils are necessary.

In addition to invoking the contingency plan portion of the 1996 ROD, this ESD will update the cleanup standards at the Site for the chemical arsenic. The cleanup standard for arsenic in groundwater under the 1996 ROD was set at 50 ug/L, but due to regulatory changes that have occurred since the ROD was originally issued, and to ensure the protectiveness of the selected remedy, the arsenic cleanup standard for the Site is being set to 10ug/L.

Lastly, this ESD will clearly define the Remedial Action Objectives for the Chevron Site, which are not explicitly stated in the 1996 ROD. While cleanup levels are

provided within the ROD, RAOs describe the overall objective of implementing a remedy. As such, obtaining cleanup levels are a facet of a given remedy's objectives, but other objectives may include the prevention of potential exposure to Site contaminants.

Contingency Remedy Implementation

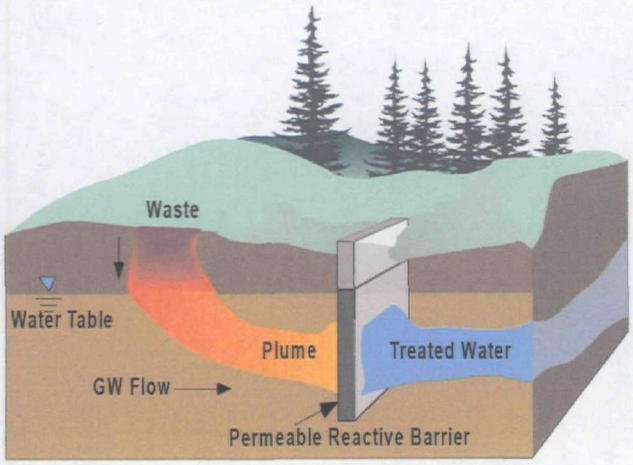
Implementation of the contingency remedy, prescribed under the 1996 ROD, will involve the installation of a subsurface filter wall (PRBs) and the removal of additional source materials from on-Site soils. These contingency measures are described in the following sections.

Subsurface Filter Wall

The May 2004 detection of organic contaminants in sentinel well MW-15 prompted Chevron to initiate a pilot study to evaluate the installation of a subsurface filter wall. Subsurface filter walls come in a variety of shapes and sizes, of which Permeable Reactive Barriers (PRBs) are an included subset. In November 2006, Chevron submitted a PRB pilot study workplan to EPA which was conditionally approved in October 2006. Approval of the work plan was conditional upon FDEP concurrence, which was provided in 2006.

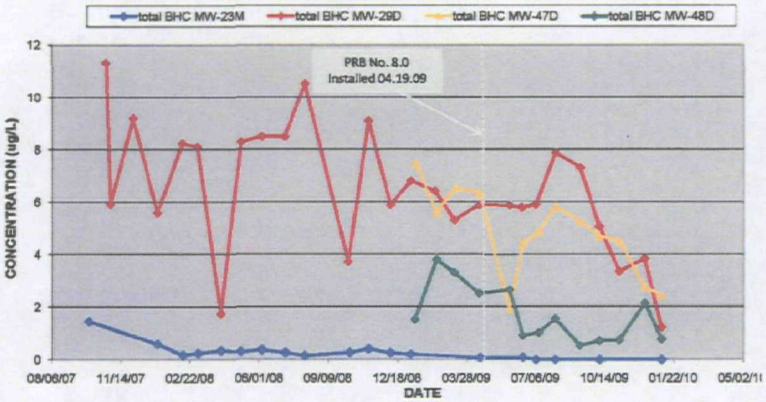
PRBs typically operate by placing reactive material in the subsurface pathway of a contaminated groundwater plume, whereby remediation is achieved as contaminants are either immobilized or transformed into innocuous compounds as they come into contact with the reactive material. As such, PRBs act as a barrier to contaminants within a groundwater plume, and not as a barrier to the actual flow of groundwater. A typical depiction of a PRB is shown below in Figure 1.

Figure 1.
Example of plume being treated by a PRB wall



As part of the PRB pilot study, Chevron installed a total of eight PRBs employing Zero Valent Iron (ZVI) within an organic substrate, under varying configurations and construction techniques. The effects of the PRBs on groundwater contamination have been documented and evaluated through the existing monitoring network and under established data collection protocols. The data demonstrate that the PRBs have the ability to reduce a-BHC concentrations within the contaminated groundwater plume, albeit to varying degrees across the Site. Although monitoring data collected to date highlights the positive impacts of the PRBs on groundwater contamination, results from recent soil investigations indicate that the PRBs would be best utilized in conjunction with further soil removal from the former Chevron facility. The effects of the PRB is highlighted in Chart 1., below, which depicts the impact that the installation of PRB No. 8 has had on downgradient monitoring wells. From Chart 1. it is clear that within 6 month after installation, total BHC concentrations dropped with each monitoring well, some more dramatically than others.

Chart 1.
PRB No. 8 Effect on Total BHC Conc. in Treatment Zone



While the initial intent of the PRB pilot study was one of design optimization, complexities in the Site's lithology and the multitude of design permutations determined the total number of PRBs installed. As a consequence of conducting a thorough pilot study, an array of PRBs were installed throughout the Site by the completion of the pilot study. The eight PRBs managed to capture nearly all of the groundwater plume that is migrating downgradient of from the Site. Given this comprehensive areal coverage, and based upon the decision to augment the subsurface barrier walls with additional source soils excavation, supplementary barrier wall installations have been determined to be unnecessary at this time. Since the effective life span of the PRBs already installed is estimated to be between five and ten years, additional costs associated with the PRBs consists of costs of routine maintenance and

performance monitoring. This statement however, does not preclude the additional usage of PRBs at the Site, if deemed necessary for implementing this contingency plan.

Although the use of PRBs was envisioned to be the primary remedial strategy when the ROD contingency was originally written, the final strategy for the Site will rely most heavily on gains attributable to the planned soil removal. As such, the PRBs will act as a polishing treatment for the contaminated groundwater plume as it moves toward Lake Fairview, as opposed to providing the bulk of the contaminant remediation.

Source Zone Removal

In addition to the installation of PRBs, the ROD contingency provides for additional control measures to address contaminant migration and attenuation. Additional source removal is one such control measure provided for that will be implemented as part of this ESD.

Beginning with the initial detection of organic contaminant in sentinel well MW-15, and conducted concurrently with the PRB pilot study, several soil studies were performed on the Chevron Site in order to determine if on-Site soils are a significant contributor to the lingering groundwater contamination. The results of these soil investigations located two areas on the Site containing residual organic contaminants. As predicted, these areas have exacerbated the groundwater contamination for years by acting as a continuing source of contamination to groundwater. This constant influx of contamination helps to explain the failings of the MNA remedy, since any gains attributable to natural attenuation have been undermined by the presence of these source areas.

In order to determine the contaminant contribution to groundwater associated with these source zones, a leachability study was conducted, which took into consideration guidance issued by EPA, FDEP, and the Hawaii Department of Health, prevailing Site conditions, and chemicals of concern (COCs) physical and chemical properties. The results of this study established Site-specific leachability parameters, which were then used to determine a conservative volume of contaminated soil that would need to be removed to allow natural attenuation to provide an effective means for Site groundwater recovery.

Based upon these calculations, Chevron, EPA and FDEP have targeted approximately 3,153 cubic yards of soil to be excavated and disposed of off-Site. It is estimated that the proposed source removal will remove 94% of the residual contamination on Site, thus preventing further loading of contaminants into the groundwater.

Changes to Groundwater Cleanup Standard for Arsenic at the Chevron Site

The regulatory history of arsenic in drinking water dates back to 1942 with a United States Public Health Service (U.S.PHS) standard of 50 ug/L for interstate water carriers. This standard was based on short-term, acute toxic exposure effects. The U.S. PHS reaffirmed the 50 ug/L standard in 1946, and then again in 1962 as grounds for rejecting a water supply. Using this standard, EPA established a drinking water standard for arsenic in the Safe Drink Water Act (SDWA) in 1975, and in the SDWA Amendments of 1986, whereby the MCL for arsenic was set at 50 ug/L.

Since 1996, EPA promulgated the "Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Final Rule" on January 22, 2001. Through this rulemaking, EPA revised the drinking water standard for arsenic by setting the MCL at 10 ug/L, replacing the old standard of 50 ug/L.

When the 1996 ROD for the Chevron Site was written, the arsenic MCL was set at 50 ug/L, and served as the basis for the Site's arsenic groundwater cleanup level. However, based upon new information about the effects of arsenic in drinking water, the current MCL for arsenic has been set to a more protective value of 10 ug/L. As such, the cleanup standard for arsenic at the Chevron Site is currently not considered to be protective of human health and the environment. In order to bring the arsenic cleanup standard for the Chevron Site up to date and maintain protectiveness of this remedy, this decision document will replace the old standard of 50 ug/L with the new cleanup standard for arsenic of 10 ug/L. This decision is further documented in the applicable or relevant and appropriate requirements (ARARs) table attached to this document. Specifically, the inclusion of F.A.C 62-550.310(1)(c) reflects this update to the arsenic in groundwater cleanup standard for the Site.

Table 1. below, provides the cleanup levels for all contaminants of concern at the Site. This includes the update to the COC cleanup levels that were amended in 2003 through an ESD. The 2003 ESD changed the cleanup standards for ethylbenzene and xylene from 30 ug/L, and 20 ug/L, to 700 ug/L and 10,000 ug/L, respectively Further information on these revised cleanup standards can be found in the 2003 ESD, which is located in the Administrative Record.

Table 1.
Cleanup Standards for the Chevron Site

Groundwater Contaminants	Cleanup Standard (ug/L)
Benzene	1
Ethylbenzene	700*
Xylene	10,000*
Total Napthalenes	100
4,4-DDD	0.1
a-BHC	0.05
b-BHC	0.1
g-BHC (Lindane)	0.2
Chlordane	2
Arsenic	10*
Chromium	100
Lead	15
* indicates that cleanup standard has been changed since the ROD	

Remedial Action Objectives (RAOs)

CERCLA and the NCP define RAOs that are applicable to all Superfund Sites. They relate to the statutory requirements for the development of remedial actions. Site-specific RAOs relate to potential exposure routes and specific contaminated media, and are used to identify target areas of remediation and contaminant concentrations.

RAOs are typically included in a ROD to convey the overall need for pursuing a remedial action at a Site. They require an understanding of the contaminants in their respective media and are based upon the evaluation of risk to human health and the environment; protection of groundwater; information gathered during the remedial investigation; and applicable or relevant and appropriate requirements (ARARs). Since the 1996 ROD did not specifically identify RAOs for the Chevron Site, this Amendment provides the RAOs for the Chevron Site, which are based on risks posed to human health from exposure to groundwater, protection of groundwater and the expectation that groundwater is restored to beneficial use. The RAOs for the Chevron Site are:

- Prevent the potential exposure to contaminated groundwater on the Site for human health.
- Restore groundwater quality to the cleanup levels specified in the ROD, thereby restoring groundwater to potential beneficial use.
- Prevent or minimize migration of contaminated groundwater for the protection of the environment.

Applicable or Relevant and Appropriate Requirements (ARARs)

Cleanup or remedial actions must comply with applicable or relevant and appropriate requirements (ARARs) under Federal environmental laws, and State environmental or facility siting laws. Identification of ARARs must be done on a Site-specific basis. Although on-Site portions of cleanup activities at CERCLA Sites are exempt from permitting requirements, they must meet the substantive requirements of the ARARs. The ROD provides a detailed discussion of potential ARARs for a wide range of activities at the Site. A table of significant ARARs associated with activities resulting from this ESD is provided as an attachment entitled "ARARs Tables".

Expected Outcomes of Contingency Remedy Implementation

The implementation of the contingency remedy will result in the excavation of approximately 3,153 cubic yards of soil, which is expected to remove nearly 94% of the residual contaminated soil mass. This excavation should nearly eliminate the migration of contaminants from contaminated soils into the underlying groundwater. Since natural attenuation mechanisms are occurring on the Site, the removal of on-Site source materials will serve to greatly expedite groundwater recovery.

The installation of the PRBs will serve to effectively prevent lateral migration of contaminated groundwater as it moves towards Lake Fairview. The source removal will act to reduce the contaminants migrating from the Site and the PRBs will operate as a polishing agent for any contaminants remaining in the groundwater that migrate from the Site towards Lake Fairview.

Statutory Determination

The changes to the ROD documented in this ESD are considered to be protective of human health and the environment, comply with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, are cost effective, and use permanent solutions to the maximum extent practicable for this Site.

Next Steps

The removal of the contaminated source zone soils will begin upon EPA's approval of the Chevron "Source Reduction Work Plan." Groundwater sampling will continue in order to monitor the progress of natural attenuation until the cleanup standards are reached. Additionally, the maintenance of the PRBs already installed and the current ICs in place will continue.

Who Can You Call For Answers?

If you have a question about activities on the Site, please call James Hou, the EPA remedial project manager. He can be reached at (800)435-9234 or via email at *hou.james@epa.gov*.

Authorizing Signature

I have determined that the remedy for the Site, as modified by this ESD, is protective of human health and the environment, and will remain so provided that the actions presented in this report are implemented as described above.

This ESD documents the significant changes related to the remedy at the Site. U.S. EPA selected these changes after consultation with the FDEP.

U.S. Environmental Protection Agency

By: _____

Franklin E. Hill, Director
Superfund Division

Date: 9/30/2010

Attachment:
ARARs Tables

Table 1-1: Chemical-Specific ARARs
Chevron Chemical Superfund Site, Orlando, Orange County, Florida

Requirement	Citation	ARAR Type	Description	Comment
Soil and Groundwater Cleanup Levels/Criteria				
Safe Drinking Water Act-National Primary Drinking Water Standards, Maximum Contaminant Level (MCLs)	40 CFR Part 141.61 (organics) and 141.62 (inorganics)	Relevant and Appropriate	Legally enforceable federal drinking water standards that establish maximum contaminant levels (MCLs) for specific contaminants that have been determined to adversely affect human health.	These standards are relevant and appropriate to the restoration of groundwater, a potential drinking water source.
Florida Groundwater Classes, Standards, and Exemptions	Chapter 62-520.410 and 62-520.420, FAC	Applicable	Designates the groundwater of the State into five classes and establishes minimum criteria. This rule also specifies that Class I and Class II groundwater must meet primary drinking water standards listed in Chapter 62-550.310, FAC.	This rule was used to classify groundwater and establish cleanup goals for groundwater. Groundwater at this Site is considered a potential source of drinking water (Class G-II).
Florida Drinking Water Standards, Monitoring and Reporting	Chapter 62-550.310, FAC	Relevant and Appropriate	Provides primary drinking water quality standards and maximum contaminant levels (MCLs) for public water supply systems that are applicable at the tap and are relevant and appropriate to the restoration of a Class G-II aquifer. Remedial objectives require restoration of the surficial aquifer to drinking water quality standards.	Cleanup goals for some of the COCs in groundwater are based upon MCLs listed in this rule. RAOs require restoration of surficial aquifer to drinking water quality standards.

Table 1-2: Action-Specific ARARs and To Be Considered (TBC)
Chevron Chemical Superfund Site, Orlando, Orange County, Florida

Requirement	Citation	ARAR Type	Description	Comment
			Waste Characterization, Storage, Treatment and Disposal	
Resource Conservation & Recovery Act (RCRA) Regulations – Identification, Characterization and Listing of Solid and Hazardous Wastes	40 Code of Federal Regulations (CFR) Part 262.11(a)-(d) (*Solid waste*) and 264.13(a)(1) (*Hazardous waste*)	Applicable	Requires characterization of solid waste and additional characterization of waste determined to be hazardous. Part 261.11(a)-(d) requires determination of whether solid waste is hazardous. Part 263.13(a)(1) requires a detailed chemical and physical analysis of a representative sample of the waste to determine treatment, storage, and disposal requirements.	Response action is expected to generate non-hazardous solid waste (contaminated soil determined not to be hazardous) and RCRA hazardous waste.
RCRA – Land Disposal Restrictions (LDRs) Treatment Standards for Contaminated Soil	40 CFR Part 268.7(a) and 268.49	Applicable	40 CFR Part 268.7 requires determination of whether waste is restricted from land disposal under 40 CFR 268 et. seq. by testing in accordance with prescribed methods or by use of generator knowledge of the waste. 40 CFR 268.49 prohibits land disposal of untreated hazardous wastes and provides treatment standards for contaminated soil considered hazardous waste.	Excavated soil determined to be hazardous waste will be sent off-Site for treatment and disposal at an appropriate facility.
RCRA Regulations – Temporary on-Site Use and Management of Hazardous Waste in *Containers*	40 CFR Part 265.171 to 173	Applicable	Establish requirements for use and management of hazardous waste in containers on-Site.	Containers that may be used for temporary storage of hazardous waste (i.e., precipitate, contaminated soil) on Site prior to off-Site treatment and disposal will comply with these requirements.
			Waste Transportation	
RCRA Regulations – Transportation of Hazardous Waste *off-Site*	40 CFR Part 262.10(h)	Applicable	An owner or operator who initiates a shipment of hazardous waste from a treatment, storage, or disposal facility must comply with the generator standards established in this part, including the requirements of 40 CFR 262.20-23 for manifesting; Section 262.30 for packaging; Section 262.31 for labeling; Section 262.32 for marking; Section 262.33 for placarding; Section 262.41(a) for record-keeping; and Section 262.12 to obtain EPA ID number.	Hazardous waste requiring off-Site disposal will meet transportation requirements.
Hazardous Materials	40 CFR Part 171.1(c)	Applicable	This regulation applies to any person, including a person under	Hazardous material requiring off-

Table 1-2: Action-Specific ARARs and To Be Considered (TBC)
Chevron Chemical Superfund Site, Orlando, Orange County, Florida

Requirement	Citation	ARAR Type	Description	Comment
Transportation Law (49 U.S.C. §§ 5101 et seq.) Regulations			contract with a department or agency of the federal government, that transports, or causes to be transported or shipped "in commerce", a hazardous material. Such shipments shall be subject to and must comply with all applicable provisions of the HMTA and HMR at 49CFR 171-180 related to marking, labeling, placarding, packaging, emergency response, etc...	Site disposal will meet this transportation requirement.
RCRA Regulations, Transportation of Wastes	40 CFR 263.10 through 263.31	Applicable	These regulations establish standards which apply to persons transporting hazardous waste within the United States if the transportation requires a manifest under 40 CFR Part 262	Hazardous material requiring off-Site disposal will meet this transportation requirement.
Solid Waste Management and Disposal				
Florida Solid Waste Management Facilities Regulations	Chapter 62-701.300, Florida Administrative Code (FAC)	Relevant and Appropriate	Prohibits storage, processing, or disposal except at a permitted solid waste management facility.	Waste generated on Site and deemed nonhazardous solid waste will be stored, transported, or disposed of properly.
General Construction Standards – Land Disturbing Activities – Water Wells				
Construction of Groundwater Monitoring Wells	40 CFR 264.97(c)	Relevant and Appropriate	All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole, this casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples, the annular space above the sampling depth must be sealed to prevent contamination of groundwater and samples.	Construction activities related to the PRB installation
Florida General Pollutant Emission Limitation Standards	Chapter 62-296.320(4)(c), FAC	Applicable	Requires reasonable precautions, such as application of water or other dust suppressants, to control emission of particulate matter from any activity including but not limited to, vehicular movement and construction..	Precautions will be undertaken to prevent fugitive dust emissions from any land disturbing activities.
Florida Regulation of Stormwater Discharge – Facility Performance Standards	Chapter 62-25.025(7), FAC	Relevant and Appropriate	Establishes requirements for discharges of untreated stormwater from the facility to ensure protection of the surface waters of the state.	Erosion and stormwater control best management practices will be implemented during construction to retain sediment on Site.
Florida Generic Permit For Stormwater	Chapter 62-621.300(4)(a), FAC	Applicable	Requires development and implementation of best management practices (BMPs) and erosion and sedimentation controls for	Erosion and stormwater control BMPs will be implemented

Table 1-2: Action-Specific ARARs and To Be Considered (TBC)
Chevron Chemical Superfund Site, Orlando, Orange County, Florida

Requirement	Citation	ARAR Type	Description	Comment
Discharge from Construction Activities			stormwater discharges to ensure protection of the surface waters of the state.	during construction activity such as well installation and slurry wall construction to retain sediment on Site.
Florida Hazardous Waste Requirements for Remedial Action	Chapter 62-730.225(3) FAC	Applicable	Requires warning signs at Sites suspected or confirmed to be contaminated with hazardous wastes.	This requirement will be met.
Florida Water Well Construction Standards Rule	Chapter 62-532.500, FAC	Applicable	Establishes minimum standards for the location, construction, repair and abandonment of water wells.	The requirements for the construction, repair and abandonment of monitoring, extraction and injection wells will be met.
Florida Underground Injection Control Regulations	Chapter 62-528.600 through 528.645, FAC*	Applicable	Establishes standards and criteria for construction, operation, monitoring, plugging, and abandonment for Class V wells Group 4 injection wells associated with aquifer remediation projects.	Requirements pertaining to Class V Group 4 injection wells will be followed.

Table 1-3: Location-Specific ARARs and To Be Considered (TBC)
Chevron Chemical Superfund Site, Orlando, Orange County, Florida

Requirement	Citation	ARAR Type	Description	Comment
There are no Location-Specific ARARs or To Be Considered requirements for the Chevron Site.				