CER FLD984169235

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

IN THE MATTER OF:	)	
	)	**Proceeding under Sections 104,**
Orlando Gasification Site	)	**122(a) and 122(d)(3) of the**
	)	**Comprehensive Environmental**
	)	**Response, Compensation**
	)	**and Liability Act of 1980**
	)	**as amended, 42 U.S.C.**
	)	**§§ 9604 and 9622.**
Respondents	)	
Atlanta Gas Light Company,	)	
Florida Power Corporation, and	)	
Peoples Gas System.	)	
	)	**EPA Docket No.: CER-04-2003-3527**
_____	)	

ADMINISTRATIVE ORDER BY CONSENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY

I. JURISDICTION

This Administrative Order by Consent (Consent Order) is entered into by the United States Environmental Protection Agency (EPA) with Respondents, pursuant to the authority vested in the President of the United States by Sections 104, 122(a) and 122(d)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§ 9604, 9622(a) and 9622(d)(3). This authority was delegated by the President to the Administrator of the EPA by Exec. Order No. 12580, dated January 23, 1987, 52 Fed. Reg. 2923 (Jan. 29, 1987), and was further delegated to the Regional Administrator of Region IV EPA and redelegated to the Director, Waste Management Division.

Respondents agree to undertake all actions required by the terms and conditions of this Consent Order for the conduct and implementation of the Remedial Investigation and Feasibility Study (RI/FS). The Respondents consent to and will not contest EPA jurisdiction regarding this Order.

II. PARTIES BOUND

This Consent Order shall apply to and be binding upon EPA and the Respondents, their successors, and assigns. Respondents are jointly and severally responsible for carrying out all actions required of them by this Consent Order. The signatories to this Consent Order certify that they are authorized to execute and legally bind the parties they represent to this Consent

Order. No change in the ownership or corporate status of any Respondent shall alter its responsibilities under this Consent Order.

The Respondents shall provide a copy of this Consent Order to any subsequent owners or successors before ownership rights are transferred. The Respondents shall provide a copy of this Consent Order to all contractors, subcontractors, laboratories, and consultants which are retained to conduct any work performed under this Consent Order, within fourteen (14) days after the effective date of this Consent Order or the date of retaining their services, whichever is later. Respondents shall condition any such contracts upon satisfactory compliance with this Consent Order. Notwithstanding the terms of any contract, Respondents are responsible for compliance with this Consent Order and for ensuring that their subsidiaries, employees, contractors, consultants, subcontractors and agents comply with this Consent Order.

III. DISCLAIMER

By signing this Consent Order and taking actions under this Order, the Respondents do not necessarily agree with EPA's Findings of Fact and Conclusions of Law. Furthermore, the participation of the Respondents in this Order shall not be considered an admission of liability and is not admissible in evidence against the Respondents in any judicial or administrative proceeding other than a proceeding by the United States, including EPA, to enforce this Consent Order or a judgment relating to it. Respondents retain their rights to assert claims against other potentially responsible parties at the Site. However, the Respondents agree not to contest the validity or terms and conditions of this Order in any action brought by the United States, including EPA, to enforce its terms.

IV. STATEMENT OF PURPOSE

In entering into this Consent Order, the mutual objectives of EPA and Respondents are: (A) with respect to the Remedial Investigation (RI), to determine fully the nature and extent of the threat to the public health or welfare or the environment caused by the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site into the environment; and (B) with respect to the Feasibility Study (FS), to develop and evaluate alternatives for remedial action to prevent, mitigate or otherwise respond to the migration or the release or threatened release of hazardous substances, pollutants, or contaminants from the Site; and (C) to recover response and oversight costs incurred by EPA with respect to this Consent Order.

The activities conducted pursuant to this Consent Order will be consistent with the National Contingency Plan (NCP), 40 C.F.R. Part 300, et seq., and will be subject to the express EPA approvals as set forth below.

V. FINDINGS OF FACTS

The following constitutes an outline of the facts upon which this Consent Order is based:

A. The Orlando Gasification Site (Site) is approximately four acres and is located in the 500 and 600 blocks of West Robinson Street, Orlando, Orange County, Florida.

The Site was developed as a manufactured gas plant (MGP) in 1888 and operated until approximately 1960. Operations on Site consisted of the manufacture of water gas and carbureted water gas. By-products of these processes (coal tar, coke, oils, and condensates) were generated on Site and subsequently stored and/or disposed on Site.

Currently, on the Site property there are several buildings, parking areas, repair and maintenance facilities, and associated structures. The area surrounding the Site is comprised of commercial and residential structures due to its close proximity to the business district of Orlando. The Site is bordered to the north by the S&L Railway and industrial property, to the east by commercial property, to the south the FDLE Office Building and by single-unit residential property, to the west by commercial and multi-unit residential property, and to the southwest by Callahan Park. A portion of the former manufactured gas plant is also located on property currently owned by: 1) Barbara L. Simms at 603 and 611 West Robinson Street, Orlando, Florida; 2) Blaine Pierce at 511 West Robinson Street, Orlando, Florida; 3) Robert E. Clark at 505 West Robinson Street, Orlando, Florida; and 4) Flying Tigers Communications, Inc. at 503 West Robinson Street, Orlando, Florida.

B. The Respondents are as follows: 1) Atlanta Gas Light Company, previous owner/operator (successor in interest to the South Atlantic Gas Company); 2) Florida Power Corporation, previous owner/operator (successor in interest to the Florida Public Service Corporation); and Peoples Gas System, current owner.

C. Previous investigations of the Site are as follows: 1) in October 1988, the U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation performed a Site Investigation; 2) in June 1990, the NUS Corporation, on behalf of EPA, conducted a Phase II Screening Site Inspection; 3) in February 1992, Dynamac Corporation, on behalf of EPA, performed a Site Inspection Prioritization of the Site; 4) in March 1995, Black & Veatch, on behalf of EPA, performed an Expanded Site Inspection (ESI) to identify and characterize contaminants that may be present in the environment as a result of past operational activities conducted at the Site; and 5) in September 2002, Jacques Whitford Company, Inc., on behalf of a group of potentially responsible parties (PRPs), completed an Expanded Site Investigation (ESI-2) to further characterize contamination in the Floridan aquifer.

D. During the performance of the ESI, surface soil, subsurface soil, and groundwater samples from the surficial aquifer, were collected and subsequently analyzed. Inorganic analytes were detected at elevated levels in all surface soil samples, in some subsurface soil samples, and in the surficial aquifer. Inorganic analytes detected at elevated levels include arsenic, barium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, vanadium, zinc, and cyanide. Elevated levels of extractable organic constituents were detected in all surface soil samples, in some subsurface soil samples, and in two wells in the surficial aquifer. Extractable organic constituents detected at elevated levels in the soil include 2-

methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(b and/or k)fluoranthene, benzo (ghi)perylene, benzo(a)pyrene, carbazole, chrysene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. An extractable organic constituent, 2-methylnaphthalene, was detected at elevated levels in the surficial aquifer. Elevated levels of purgeable organic constituents were detected in some surface soil samples, in one subsurface soil sample, and in two wells in the surficial aquifer. Purgeable organic constituents detected in surface soil samples include ethyl benzene, methyl ethyl ketone, toluene, and xylenes and in subsurface soil include ethyl benzene and total xylenes. Purgeable organic constituents detected in the surficial aquifer include benzene, ethyl benzene, toluene and xylenes. Elevated levels of pesticides were detected in some soil samples. Pesticides detected at elevated levels include alpha-chlordane and endosulphan. The pesticide alpha-chlordane was detected in one subsurface soil sample.

E. The City of Orlando maintains several drainage wells in the vicinity of the Site. These wells are drilled into the Upper Floridan Aquifer. Drainage wells were first drilled in Orlando in 1904 to alleviate flooding in the southeastern part of the city. Surface water runoff and wastewater is directed to the wells for the purpose of land drainage. By the mid-1940s, approximately 200 drainage wells had been completed within the Upper Floridan Aquifer.

F. Previous investigations at the Site and well records indicate that an Upper Floridan aquifer drainage well may have been located on the Site. A drainage well inventory, generated by the Florida Department of Air and Water Pollution Control (currently the Florida Department of Environmental Protection) and dated 1970, lists issued permit 110 for a drainage well at 558 Robinson Street. Permit 110 was issued in 1941 to drill a 12-inch diameter well to a depth of 250 feet below land surface to dispose of condensate water.

G. Based on the elevated concentrations of organic and inorganic contaminants in the soils and the surficial aquifer, the drainage wells connecting directly to the Floridan Aquifer, the potential presence of a drainage well on Site, and the proximity of city supply wells, the potential impacts from the Site to the Floridan Aquifer was of major concern. Therefore, on January 28, 2002, the United States Environmental Protection Agency (EPA) entered into an Administrative Order by Consent (AOC) with Florida Power Corporation, Atlanta Gas Light Company, and Peoples Gas System (ESI-2 Respondents). That AOC called for an Expanded Site Investigation Phase II (ESI-2) on and near the Site. The ESI-2 work was conducted to investigate soil and groundwater quality in the area of the Site including, primarily, the groundwater quality within the Upper Floridan Aquifer.

H. The results of this study are documented in the September 24, 2002, Expanded Site Investigation (ESI-2) Report prepared for the ESI-2 Respondents by Jacques Whitford Company, Inc. The ESI-2 confirmed the results of earlier studies, indicating the presence of MGP-related inorganic and organic contaminants in the surficial aquifer. In addition, the ESI-2 revealed that Site-related contamination has migrated into the Upper Floridan Aquifer, to depths of up to 280 feet below land surface. Significant visual evidence of contamination, including tar and non-

aqueous phase liquids (NAPL), were found in both surficial aquifer and Floridan aquifer soil borings in the vicinity of the MGP Site.

Subsurface soils within the surficial sand unit contain concentrations of mononuclear aromatic hydrocarbons (MAHs), polynuclear aromatic hydrocarbons (PAHs), metals and cyanide. These impacts were identified during the ESI-2 and previous investigations. The most significant MGP-related impacts in the surficial sand unit are located on the north-central portion of the Site. Minimal impacts were observed on the portion of the Site south of West Robinson Street. The horizontal extent of these impacts is not yet fully defined. The vertical extent of these impacts is effectively defined by the top of the underlying Hawthorn Group clays.

MGP by-products were also detected in groundwater from the surficial aquifer. MAH concentrations, notably benzene, exceed regulatory criteria (EPA and State of Florida Primary MCLs) at several monitoring wells within the Surficial aquifer. Based on the data, MAH and PAH concentrations in groundwater appear to be higher and more widespread within the lower surficial aquifer than in the upper surficial aquifer. NAPL is present in two upper surficial monitoring wells (ESI-MW-05 and US-MW-4) within the north-central portion of the Site. The extent of surficial aquifer groundwater impacts is not yet fully defined.

The results of the drilling work conducted for the ESI-2 demonstrate the confining nature of the Hawthorn Group clays. Based on permeability test results, the Hawthorn Group clays display very low hydraulic conductivity relative to the overlying and underlying aquifers. These clays form an effective and competent confining unit that is approximately 150 ft thick in the vicinity of the Site. No visible signs of MGP residuals were apparent within the Hawthorn Group clays, although MGP-like odors were noted at the base of the clay unit.

MAHs, PAHs, arsenic, and cyanide were detected in subsurface soil samples collected from the Ocala Limestone unit (Upper Floridan Aquifer) at ESI-2 boring locations. Concentrations of detected compounds generally decrease with depth. MGP by-products have also been detected in groundwater from the Upper Floridan Aquifer that exceed regulatory criteria (EPA and State of Florida Primary MCLs). Benzene was detected in groundwater samples from all Upper Floridan monitoring and drainage wells sampled during the ESI-2. The horizontal and vertical extent of these soil and groundwater impacts are not fully defined.

MGP-related tar and NAPL were identified primarily in the former production area within the surficial sands and MGP-like odors extend downward to the contact with the Hawthorn Group clays. These materials were also present in the former tar management area, within a concrete box on the south side of West Robinson Street, and at the top of the Ocala Limestone unit (Upper Floridan Aquifer) in well UF-MW-4. The horizontal extents of the tar impacts observed in the Upper Floridan and the surficial soils are not fully defined.

Based on the confining nature of the Hawthorn Group, it is highly unlikely that any MGP related by-product materials migrated from the surficial sands and surficial aquifer through the Hawthorn Group and into the Ocala Limestone of the Upper Floridan aquifer. The presence of

relatively non-weathered tar-NAPL between 200 and 205 ft bls and residual tar blebs and sheens between 205 and 210 ft bls at well UF-MW-4 suggests that MGP by-product materials entered the Ocala Limestone via manmade conveyances, such as the drainage wells, which are referenced above.

VI. CONCLUSIONS OF LAW

A. The Site is a facility within the meaning of Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

B. The Respondents are persons as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

C. The Respondents are responsible parties under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

D. Contaminants found at the Site as described in Section IV above are hazardous substances within the meaning of Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), or constitute a pollutant or contaminant that may present an imminent and substantial danger to the public health or welfare under Section 104(a)(1) of CERCLA, 42 U.S.C. 9604(a)(1).

E. The hazardous substances described have been released into the environment and its potential migration pathways constitute both an actual release and threatened release within the meaning of Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

VII. DETERMINATIONS

Based on the Findings of Fact and Conclusions of Law set out above, EPA has determined that:

A. The actual and/or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health or welfare or the environment.

B. The actions required by this Consent Order are necessary to protect the public health and/or welfare and/or the environment.

C. In accordance with Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1), EPA has determined that the work to be performed pursuant to this Consent Order, if performed according to the terms of this Order, will be done properly and promptly by the Respondents. EPA has also determined that the Respondents are qualified to conduct such work.

VIII. WORK TO BE PERFORMED

All aspects of the Work to be performed by Respondents pursuant to this Consent Order shall be under the direction and supervision of Jacques Whitford Company, Inc., which EPA has approved as the Respondent's contractor for this Site.

If, at any time hereafter, Respondents propose to change any contractor, Respondents shall give written notice to EPA and shall obtain approval from EPA before the new contractor performs any work under this Consent Order. If Respondents propose to change their contractor, then the new contractor shall be a qualified professional engineer or geologist with expertise in hazardous site cleanup, the selection of which shall be subject to approval by EPA. Respondents shall submit to EPA in writing the name, title, and qualifications of the new supervising contractor proposed to be used in carrying out the RI/FS to be performed pursuant to this Consent Order. Respondents shall demonstrate that the proposed new contractor has a quality system which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan (QMP) or equivalent documentation as determined by EPA. The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001). EPA shall notify the Respondents of its approval or disapproval of the proposed new contractor in writing, within twenty (20) calendar days of its receipt of this submission by the Respondents.

Based on the foregoing, it is hereby AGREED TO AND ORDERED that the following work will be performed:

A. Respondents have submitted to EPA a Remedial Investigation/Feasability Study (RI/FS) Work Plan, and EPA and Respondents have been working on the finalization of this Work Plan. Within forty-five (45) calendar days of receipt of EPA's comments on Respondents' proposed RI/FS Work Plan, Respondents shall submit to EPA a final RI/FS Work Plan. The RI/FS Work Plan shall be developed and submitted in conjunction with a Sampling and Analysis Plan and a Health and Safety Plan, although each plan may be delivered under separate cover. These plans shall be developed in accordance with the National Contingency Plan and the attached Scope of Work (SOW) (Attachment 1) which is hereby made a part of this Consent Order as if fully set forth herein. The RI/FS Work Plan shall include a comprehensive description of the work to be performed, the media to be investigated (i.e., air, groundwater, surface water, surface and subsurface soils and sediments, etc.), the methodologies to be utilized, and the rationale for the selection of each methodology. A comprehensive schedule for completion of each major activity required by this Consent Order and including the submission of each deliverable listed in the RI/FS Scope of Work shall also be included. Such schedule shall reflect submittal of the Draft Feasibility Study within 400 calendar days of the effective date of this Consent Order, or such other submittal date as may be approved by EPA.

The Sampling and Analysis Plan (SAP) shall include procedures to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols, including, without limitation, "EPA Guidance for Quality Assurance Project Plans (QA/G-5)"(EPA/600/R-98/018, February 1998), and "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA 240/B-01/003, March 2001) and that the data generated will meet the Data Quality Objectives (DQOs) established. The SAP provides a mechanism for planning field activities and consists of a Field Sampling and Analysis Plan (FSAP) and a Quality Assurance Project Plan (QAPP).

The FSAP shall define in detail the sampling and data-gathering methods that shall be used on the project. It shall include sample objectives, sample location (horizontal and vertical) and frequency, sampling equipment and procedures, and sample handling and analysis. The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that shall be used to achieve the desired DQOs.

A Health and Safety Plan shall be prepared in conformance with the Respondents' health and safety program and OSHA regulations and protocols.

B. EPA will prepare a Community Involvement Plan, in accordance with EPA guidance and the NCP. Respondents shall provide information supporting EPA's community relations programs. When requested by EPA, Respondent(s) also shall provide EPA with the following deliverable:

Technical Assistance Plan: Within 30 days of a request by EPA, Respondent(s) shall provide EPA with a Technical Assistance Plan (TAP) for providing and administering up to $50,000 of Respondents' funds to be used by a qualified community group to hire independent technical advisors during the Work conducted pursuant to this Consent Order. The TAP shall state that Respondents will provide and administer any additional amounts needed if EPA determines that the selected community group has demonstrated such a need prior to EPA's issuance of the ROD contemplated by this Order. If EPA disapproves of or requires revisions to the TAP, in whole or in part, Respondents shall amend and submit to EPA a revised TAP that is responsive to EPA's comments, within thirty (30) days of receiving EPA's comments.

C. Respondents will perform a Human Health Baseline Risk Assessment and an Ecological Baseline Risk Assessment in accordance with EPA Human Health and Ecological Risk Assessment Guidance for Superfund. The major components of the Baseline Risk Assessments include contaminant identification, exposure assessment, toxicity assessment, and human health and ecological risk characterization. Respondents will prepare the Risk Assessment Reports based on the data collected during the Site Characterization. Upon completion of the Risk Assessments, Respondents will provide them to EPA for internal review. Respondents will address EPA's comments and provide EPA a final Human Health Baseline Risk Assessment and a final Ecological Baseline Risk Assessment. EPA will place the Risk Assessments in the Administrative Record for the Site. Respondents will assist EPA in responding to all significant comments on the Human Health and Ecological Risk Assessments

that are submitted during the formal comment period in the Responsiveness Summary of the Record of Decision for this Site.

D. Respondents will implement the RI/FS Work Plan approved by EPA. The EPA approved RI/FS Work Plan and any EPA approved amendments thereto will be attached to and incorporated in this Consent Order as Attachment 2. The RI/FS will be conducted in accordance with the schedule contained in the RI/FS Work Plan as approved by EPA.

E. Within seven (7) calendar days of the approval of the RI/FS Work Plan by EPA, Respondents will commence work on Task 1 of the RI/FS Work Plan.

F. Respondents shall submit to EPA written monthly progress reports which: (1) describe the actions which have been taken toward achieving compliance with this Consent Order during the previous month; (2) include all results of sampling and tests and all other data received by Respondents during the course of the work; (3) include all plans and procedures completed under the Work Plan during the previous month; (4) describe all actions, data, and plans which are scheduled for the next month, and provide other information relating to the progress of the work as deemed necessary by EPA; and (5) include information regarding percentage of completion, unresolved delays, encountered or anticipated, that may affect the future schedule for implementation of the Scope of Work and/or RI/FS Work Plans, and a description of efforts made to mitigate those delays or anticipated delays. These progress reports are to be submitted to EPA by the fifteenth day of every month following the effective date of this Consent Order.

G. Deliverables, including reports, plans or other correspondence to be submitted pursuant to this Consent Order, shall be sent by regular certified mail, express mail or overnight delivery to the following addresses or to such other addresses as the EPA hereafter may designate in writing:

Joe Alfano, Remedial Project Manager
U.S EPA Region 4
Waste Division, South Site Management Branch
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

The number of copies to be submitted to EPA for each deliverable is identified in the RI/FS Scope of Work.

For informational purposes documents (two copies) shall be sent to:

G. Bret LeRoux
Florida Department of Environmental Protection
Central District

3319 Maguire Boulevard, Suite 232
Orlando, FL 32803-3767

Documents to be submitted to the Respondents' Project Coordinator should be sent to:

Kerry MacPherson
Lead Environmental Specialist
Progress Energy Service Company
410 South Wilmington Street
PEB 4A
Raleigh, North Carolina 27601

H. EPA may determine that other tasks, including remedial investigatory work and/or engineering evaluation, are necessary as part of an RI/FS in addition to EPA-approved tasks and deliverables, including reports, which have been completed pursuant to this Consent Order. The Respondents shall implement any additional tasks which EPA determines are necessary as part of the RI/FS and which are in addition to the tasks detailed in the RI/FS Work Plan. The additional work shall be completed in accordance with the standards, specifications, and schedule determined or approved by EPA.

IX. SUBMISSIONS REQUIRING AGENCY APPROVAL

A. EPA reserves the right to comment on, modify and direct changes for all deliverables. Upon receipt of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Order, EPA shall either: (1) approve the submission; or (2) disapprove the submission, notifying Respondents of deficiencies. If such submission is disapproved, EPA shall either: (1) notify the Respondents that EPA will modify the submission to cure the deficiencies; or (2) direct the Respondents to modify the submission to cure the deficiencies.

B. Upon receipt of a notice of disapproval and notification directing modification of the submission, Respondents shall, within thirty (30) days, cure the deficiencies and resubmit the plan, report, or other item for approval. Notwithstanding the notice of disapproval, Respondents shall proceed to take any action required by any nondeficient portion of the submission.

C. In the event of approval or modification of the submittal by EPA, Respondents shall proceed to take any action required by the plan, report, or other item, as approved or modified.

D. If, upon resubmission, the plan, report, or item is not approved, Respondents shall be deemed to be in violation of this Consent Order and, unless excused by the provisions of Sections XV and XVI, stipulated penalties shall begin to accrue pursuant to Section XVII of this Consent Order. EPA retains the right to seek stipulated or statutory penalties, to require the amendment of the document, to perform additional studies, to conduct a complete RI/FS

pursuant to its authority under CERCLA, and to take any other action, including, but not limited to, enforcement action to recover its costs pursuant to its authority under CERCLA.

E. Neither failure of EPA to expressly approve or disapprove of Respondents' deliverables within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Respondents are responsible for preparing and submitting deliverables acceptable to EPA.

F. Respondents shall make presentations at, and participate in, meetings at the request of EPA during the initiation, conduct and completion of the RI/FS. In addition to the discussion of the technical aspects of the RI/FS, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.

G. The provisions of this Consent Order shall govern all proceedings regarding the RI/FS work conducted pursuant to this Consent Order. In the event of any inconsistency between this Consent Order and any required deliverable submitted by Respondents, the inconsistency will be resolved in favor of this Consent Order.

X. DESIGNATED PROJECT COORDINATORS

A. EPA and Respondents have each designated a Project Coordinator and an Alternate Project Coordinator for this Site. The "Project Coordinator" for EPA will be the Remedial Project Manager (RPM) or the On-Scene Coordinator (OSC) responsible for this Site. Each Project Coordinator will be responsible for overseeing the implementation of this Consent Order. The EPA Project Coordinator will be EPA's designated representative at the Site. To the maximum extent possible, communications between Respondents and EPA, including all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, will be directed through the Project Coordinators.

B. EPA and Respondents each have the right to change their respective Project Coordinator. Such a change will be accomplished by notifying the other party in writing at least five (5) calendar days prior to the change.

C. The EPA designated Project Coordinator will have the authority vested in an RPM or OSC by the National Contingency Plan, 40 C.F.R. Part 300, as amended. This includes the authority to halt, conduct, or direct any work required by this Consent Order, or any response actions or portions thereof when he or she determines that conditions may present an immediate risk to public health or welfare or the environment.

D. The absence of the EPA Project Coordinator from the Site shall not be cause for the stoppage or delay of work.

E. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FS, as required by Section 104(a) of CERCLA, 42 U.S.C. 9604(a). The oversight assistant may observe work and make inquiries in the absence of EPA, but is not authorized to modify the work plan.

XI. QUALITY ASSURANCE, SAMPLING AND DATA ANALYSIS

A. Respondents shall use quality assurance, quality control, and chain of custody procedures in accordance with EPA's "Guidance for Quality Assurance Project Plans," EPA QA/G-5,EPA/600/R-98/018, February 1998 and EPA Region 4's "Environmental Investigations Standard Operating Procedures and Quality Assurance Manual" (November 2001), and subsequent amendments to such guidelines. Prior to the commencement of any monitoring project under this Consent Order, Respondents shall submit for review, modification and/or approval by EPA, a Quality Assurance Project Plan ("QAPP") that is consistent with applicable guidelines. Sampling data generated consistent with the QAPP(s) shall be admissible as evidence, without objection, in any proceeding under Section XV of this Consent Order. Respondents shall assure that EPA personnel or authorized representatives are allowed access to any laboratory utilized by Respondents in implementing this Consent Order.

B. Respondents shall make available to EPA the results of all sampling and/or tests or other validated data generated by Respondents with respect to the implementation of this Consent Order and shall submit these results in monthly progress reports as described in Section VIII.F. of this Consent Order.

C. At the request of EPA, Respondents shall allow split or duplicate samples to be taken by EPA, and/or their authorized representative, of any samples collected by Respondents pursuant to the implementation of this Consent Order. Respondents shall notify EPA not less than fourteen (14) days in advance of any sample collection activity. In addition, EPA shall have the right to collect any additional samples that EPA deems necessary.

D. Respondents shall only use laboratories which have a documented quality system that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995) and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP) to meet the quality system requirements. In addition, EPA may require submittal of data packages equivalent to those generated in the EPA Contract Laboratory Program (CLP) and may require laboratory analysis of performance samples (blank and/or spike samples) in sufficient number to determine the capabilities of the laboratory.

E. Notwithstanding any provision of this Consent Order, the EPA hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA, and any other applicable statute or regulation.

XII. ACCESS

A. From the date of execution of this Consent Order until EPA provides written notice of satisfaction of the terms of the Order, the EPA and its authorized representatives and agents shall have access at all times to the Site and any property to which access is required for the implementation of this Consent Order, to the extent access to the property is controlled by or available to Respondents, for the purposes of conducting any activity authorized by or related to this Consent Order, including, but not limited to:

1. Monitoring the RI/FS work or any other activities taking place on the property;

2. Verifying any data or information submitted to the United States;

3. Conducting investigations relating to contamination at or near the Site;

4. Obtaining samples;

5. Evaluating the need for or planning and implementing additional remedial or response actions at or near the Site; and

6. Inspecting and copying records, operating logs, contracts, or other documents required to assess Respondents' compliance with this Consent Order.

B. To the extent that the Site or any other area where work is to be performed under this Consent Order is owned or controlled by persons other than Respondents, Respondents shall secure from such persons access for Respondents, as well as for EPA and authorized representatives or agents of EPA, as necessary to effectuate this Consent Order. Copies of such access agreements will be provided to EPA prior to Respondents' initiation of field activities. If access is not obtained within thirty (30) days of the effective date of this Consent Order, Respondents shall promptly notify the EPA. The United States may thereafter assist Respondents in obtaining access. Respondents shall, in accordance with Section XVIII herein, reimburse the United States for all costs incurred by it in obtaining access, including but not limited to, attorneys' fees and the amount of just compensation and costs incurred by the United States in obtaining access.

C. Notwithstanding any provision of this Consent Order, the EPA retains all of its access authorities and rights under CERCLA, RCRA and any other applicable statute or regulations.

XIII. CONFIDENTIALITY OF SUBMISSIONS

A. Respondents may assert a confidentiality claim, if appropriate, covering part or all of the information requested by this Consent Order pursuant to 40 C.F.R. § 2.203(b). Such an

assertion will be adequately substantiated when the assertion is made. Analytical data will not be claimed as confidential by Respondents. Information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Respondents.

B. Respondents waive any objection to the admissibility into evidence (without waiving any objection as to weight) of the results of any analyses of sampling conducted by or for them at the Site or of other data gathered pursuant to this Consent Order that has been verified by the quality assurance/quality control procedures established pursuant to Section XI.

XIV. RECORD PRESERVATION

EPA and Respondents agree that each will preserve, during the pendency of this Consent Order and for a minimum of six (6) years after its termination, all records and documents in their possession or in the possession of their divisions, employees, agents, accountants, contractors, or attorneys which relate in any way to the Site, despite any document retention policy to the contrary. After this six year period, Respondents will notify EPA within ninety (90) calendar days prior to the destruction of any such documents. Upon request by EPA, Respondents will make available to EPA such records or copies of any such records. Additionally, if EPA requests that documents be preserved for a longer period of time, Respondents will comply with that request.

XV. DISPUTE RESOLUTION

Any disputes arising under this Consent Order shall be resolved as follows: If the Respondents object to any EPA notice of disapproval or decision made pursuant to this Consent Order, the Respondents shall notify EPA's Project Coordinator in writing of their objections within 14 calendar days after receipt of the decision. Respondents' written objections shall define the dispute, state the basis of Respondents' objections, and be sent by certified mail, return receipt requested. EPA and the Respondents then have an additional fourteen (14) calendar days to reach agreement. If agreement cannot be reached within fourteen (14) calendar day period, the EPA Waste Management Division Director shall provide a written statement of the decision and the reasons supporting that decision to Respondents. The Division Director's determination is EPA's final decision. If Respondents do not agree to perform or do not actually perform the task in dispute as determined by EPA's Division Director, EPA reserves the right to conduct the work itself, to seek reimbursement from the Respondents, and/or to seek other appropriate relief. Except as otherwise provided herein, this dispute resolution provision shall not limit the Respondents' right to contest any cause of action brought by EPA in Federal Court to enforce its decision.

Respondents are not relieved of their obligations to perform and conduct any work required by this Consent Order while a matter is pending in dispute resolution.

XVI. FORCE MAJEURE

A. "Force Majeure" is defined for the purposes of the Consent Order as an event arising from causes entirely beyond the control of Respondents and of any entity controlled by Respondents including their contractors and subcontractors, which could not have been overcome by due diligence which delays or prevents the performance of any obligation under this Consent Order. Examples of events which may constitute force majeure events include extraordinary weather events, natural disasters, and national emergencies. Examples of events that are not force majeure events include, but are not limited to, normal inclement weather, increased costs or expenses of the Work to be performed under this Consent Order, the financial difficulty of Respondents to perform such tasks, the failure of one or more of Respondents to satisfy their obligation under this Consent Order, acts or omissions not otherwise force majeure attributable to Respondents' contractors or representatives, and the failure of Respondents or Respondents' contractors or representatives to make complete and timely application for any required approval or permit.

B. When circumstances occur which may delay or prevent the completion of any phase of the Work Plan or access to the Site or to any property on which part of the Work Plan is to be performed, whether or not caused by a force majeure event, Respondents shall notify the EPA Project Coordinator orally of the circumstances within forty-eight (48) hours of when Respondents first knew or should have known that the event might cause delay. If the EPA Project Coordinator is unavailable, Respondents shall notify the designated alternate or the Director of the Waste Management Division, EPA Region IV. Within seven (7) calendar days after Respondents first became aware of such circumstances, Respondents shall supply to EPA in writing: (1) the reasons for the delay; (2) the anticipated duration of the delay; (3) all actions taken or to be taken to prevent or minimize the delay; (4) a schedule for implementation of any measures to be taken to mitigate the effect of the delay; and (5) a statement as to whether, in the opinion of the Respondents, such event may cause or contribute to an endangerment to public health, welfare, or the environment. Respondents shall exercise best efforts to avoid or minimize any delay and any effects of a delay. Failure to comply with the above requirements shall preclude Respondents from asserting any claim of force majeure.

C. If EPA agrees that a delay is or was caused by a force majeure event, the time for performance of the obligations under this Consent Order that are directly affected by the force majeure event shall be extended by agreement of the parties, pursuant to Section XXVII, for a period of time not to exceed the actual duration of the delay caused by the force majeure event. An extension of the time for performance of the obligation directly affected by the force majeure event shall not necessarily justify an extension of time for performance of any subsequent obligation.

D. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, or does not agree with Respondents on the length of the extension, the issue shall be subject to the dispute resolution procedures set forth in Section XV of the Consent Order. In any such proceedings, to qualify for a force majeure defense, Respondents shall have

the burden of proof that the delay or anticipated delay was or will be caused by a force majeure event, that the duration of the delay was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Respondents complied with the requirements of paragraph B of this Section. Should Respondents carry this burden, the delay at issue shall be deemed not to be a violation by Respondents of the affected obligation of the Consent Order.

XVII. STIPULATED PENALTIES

Unless excused under the provisions of Sections XV or XVI, the Respondents shall pay into the Hazardous Substance Superfund administered by EPA, the sums set forth below as stipulated penalties.

Stipulated penalties shall accrue as follows:

A. For each day during which Respondents fail to perform, in accordance with the schedules contained in this Consent Order and in the various plans and reports required under this Consent Order incorporated by reference herein, any of the following activities:

1. for failure to timely submit the RI/FS Work Plan, Sampling and Analysis Plan, draft RI Report, draft Human Health Baseline Risk Assessment, draft Ecological Baseline Risk Assessment, and draft FS Report required under this Consent Order;

2. for failure to timely submit any modifications requested by EPA or its representatives to the RI/FS Work Plan, Sampling and Analysis Plan, draft RI Report, draft Human Health Baseline Risk Assessment, draft Ecological Baseline Risk Assessment, and draft FS Report as required under this Consent Order; and

3. for failure to timely submit payment of past costs and oversight and response costs as provided in Sections XVIII and XIX.

Respondents shall be liable to EPA for stipulated penalties in the following amounts:

Period of Failure to Comply	Penalty Per Violation Per Day
Day 1 - 7	$500.00
Day 8 - 14	$1,000.00
Day 15-30	$2,000.00
Beyond 30 days	$3,000.00

B. If Respondents fail to submit a monthly progress report by its due date, Respondents shall be liable to EPA for stipulated penalties in the amount of $500.00 per violation for each day during which Respondents fail to submit and, if necessary, modify monthly reports.

C. Respondents shall be liable to EPA for stipulated penalties in the amount of $500.00 per violation for each day during which Respondents fail to comply with all other requirements of this Consent Order including, but not limited to, any implementation schedule, payment requirement, notification requirement or completion deadline.

All stipulated penalties begin to accrue on the day the violation occurs or on the day following Respondents' failure to comply with any schedule or deadline or the terms, conditions, or requirements contained in this Consent Order and/or Work Plan. Stipulated penalties shall continue to accrue until Respondents' violation ends or until Respondents comply with the particular schedule or deadline.

Payment of stipulated penalties shall be due and owing within fifteen (15) days from the receipt of a written notice from EPA notifying Respondents that penalties have been assessed. Interest shall accrue on any unpaid amounts, beginning at the end of the fifteen day period, at the rate established by the Department of Treasury under 31 U.S.C. § 3717. Respondents shall pay a handling charge of one percent to be assessed at the end of each 31 day period, and a six percent per annum penalty charge, to be assessed if the penalty is not paid in full within 90 days after it is due. The check and transmitted letter shall identify the Name of the Site, the Site identification number and the title of this Order. A copy of the transmittal letter should be sent simultaneously to the EPA Project Coordinator.

Payment shall be made to:

U. S. Environmental Protection Agency - Region 4
Superfund Accounting
P. O. Box 100142
Atlanta, Georgia 30384
ATTENTION: (Collection Officer for Superfund)

Respondents may dispute EPA's right to the stated amount of penalties by invoking the Dispute Resolution procedures under Section XV of this Order. Penalties shall accrue but need not be paid during the dispute resolution period. If Respondents do not prevail upon resolution, all penalties shall be due to EPA within 30 days of resolution of the dispute. If Respondents prevail upon resolution, no penalties shall be paid.

In the event that EPA provides for corrections to be reflected in the next deliverable and does not require resubmission of that deliverable, stipulated penalties for that interim deliverable shall cease to accrue on the date of such decision by EPA.

Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Order.

The stipulated penalties set forth in this Section do not preclude EPA from electing to pursue any other remedies or sanctions which may be available to EPA by reason of the Respondents' failure

to comply with any of the requirements of this Consent Order. Such remedies and sanctions may include a suit for statutory penalties up to the amount authorized by law, a federally-funded response action, and a suit for reimbursement of costs incurred by the United States.

XVIII. REIMBURSEMENT OF PAST COSTS

Within thirty (30) days of the effective date of this Order, Respondents shall remit a certified or cashiers check to EPA for the reimbursement of past response costs paid by the United States. Past response costs are all costs, including but not limited to direct and indirect costs and interest, that the United States, its employees, agents, contractors, consultants, and other authorized representatives have incurred and/or paid with regard to the Site through the effective date of this Order (See Section XXVII, below). As of March 10, 2003, the past response costs incurred thus far by EPA are **$104,751.46**. In addition, Respondents shall reimburse EPA for all future response costs, not inconsistent with the NCP, incurred by the United States, as further discussed in Section XVIII, Reimbursement of Oversight and Response Costs.

Checks shall be made payable to the Orlando Gasification Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund. The check and transmittal letter shall identify the Name of the Site, the site identification number, and the title of this Order. A copy of the transmittal letter should be sent simultaneously to the EPA Project Coordinator.

Payment shall be made to:

U. S. Environmental Protection Agency
Region 4
Superfund Accounting
P. O. Box 100142
Atlanta, Georgia 30384
ATTENTION: Collection Officer for Superfund

A copy of the payment shall be forwarded to:

Ms. Paula V. Batchelor, Environmental Protection Specialist
U.S. Environmental Protection Agency
CERCLA Program Services Branch
61 Forsyth Street S.W.
Atlanta, GA 30303.

XIX. REIMBURSEMENT OF OVERSIGHT AND RESPONSE COSTS

In accordance with Section 104(a)(1) of CERCLA, as amended, 42 U.S.C. § 9604(a)(1), Respondents shall pay for all response and oversight costs incurred by EPA or its authorized representatives in oversight of Respondents' performance of work under the Consent Order.

At the end of each fiscal year, EPA will submit to Respondents an accounting of all response and oversight costs incurred by the U.S. Government with respect to this Consent Order. Oversight costs shall include all direct and indirect costs of EPA's oversight arrangement for the RI/FS, including, but not limited to, time and travel costs of EPA personnel and associated indirect costs, contractor costs, compliance monitoring, including the collection and analysis of split samples, inspection of RI/FS activities, site visits, interpretation of Consent Order provisions, discussions regarding disputes that may arise as a result of this Consent Order, review and approval or disapproval of reports, the costs of redoing any of Respondents tasks, and any assessed interest. To the extent practicable, EPA will conduct oversight management consistent with the Agency's May 17, 2000 "Interim Guidance on Implementing the Superfund Reform on PRP Oversight," a copy of which is included as Attachment 3.

EPA's Agency Financial Management System summary data (SCORPIOS Reports) and any other necessary documents, shall serve as the basis for payment demands.

Failure to submit an accounting in one fiscal year does not prevent EPA from submitting an accounting for that year in a subsequent fiscal year. Respondents shall, within thirty (30) calendar days of receipt of each accounting, remit a certified or cashiers check for the amount of those costs made payable to the Orlando Gasification Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund. Interest shall begin to accrue on the unpaid balance from that date. Checks should specifically reference the identity of the Site and should be sent to:

U. S. Environmental Protection Agency
Region IV
Superfund Accounting
P. O. Box 100142
Atlanta, Georgia 30384
ATTENTION: Collection Officer for Superfund

A copy of the transmittal letter should be sent simultaneously to the EPA Project Coordinator.

Respondents agree to limit any disputes concerning costs to accounting errors and the inclusion of costs outside the scope of this Consent Order or claims that a cost item is inconsistent with the NCP. Respondents shall identify any contested costs and the basis of its objection. All undisputed costs shall be remitted by Respondents in accordance with the schedule set out above. Disputed costs shall be paid by Respondents into an escrow account while the dispute is pending.

Respondents bear the burden of establishing an EPA accounting error, the inclusion of costs outside the scope of this Consent Order, and that a cost item is inconsistent with the NCP.

EPA reserves the right to bring an action against the Respondents pursuant to Section 107 of CERCLA to enforce the response and oversight cost reimbursement requirements of this Consent Order and to collect stipulated penalties assessed pursuant to section XVII of this Consent Order.

XX. RESERVATION OF RIGHTS

Notwithstanding compliance with the terms of this Consent Order, the Respondents are not released from liability, if any, for any actions beyond the terms of this Consent Order taken by EPA regarding this Site. EPA reserves the right to take any enforcement action pursuant to CERCLA or any other available legal authority, including the right to seek injunctive relief, monetary penalties, and punitive damages for any violation of law or this Consent Order.

Except as otherwise provided herein, EPA and Respondents expressly reserve all rights and defenses that they may have, including EPA's right both to disapprove of work performed by Respondents and to require that Respondents perform tasks in addition to those detailed in the RI/FS Work Plan, as provided in this Consent Order. In the event that Respondents decline to perform any additional or modified tasks, EPA will have the right to undertake any RI/FS work. In addition, EPA reserves the right to undertake removal actions and/or remedial actions at any time. In either event, EPA reserves the right to seek reimbursement from Respondents thereafter for such costs which are incurred by the United States and Respondents reserve all rights to contest or defend against such claims or actions.

Following satisfaction of the requirements of this Consent Order, Respondents shall have resolved their liability to EPA for the performance of the RI/FS that is the subject of this Order. The Respondents are not released from liability, if any, for any actions taken beyond the terms of this Order regarding removals, other operable units, remedial design/remedial action (RD/RA), or activities arising pursuant to section 121(c) of CERCLA.

XXI. COVENANT NOT TO SUE

Except as otherwise specifically provided in this Consent Order, upon issuance of the EPA notice referred to in Section XXIX, Notice of Completion, EPA covenants not to sue Respondents for judicial imposition of damages or civil penalties or to take administrative action against Respondents for any failure to perform the work agreed to in this Consent Order except as otherwise reserved herein.

Except as otherwise specifically provided in this Consent Order, in consideration and upon Respondents' payment of the past response costs specified in Section XVIII, Reimbursement Of Past Costs, EPA covenants not to sue or to take administrative action against Respondents under Section 107(a) of CERCLA for recovery of past costs incurred by the United States. This

Covenant not to sue shall take effect upon the receipt of EPA of the payments required by Section XVIII, Reimbursement Of Past Costs.

Except as otherwise specifically provided in this Consent Order, in consideration and upon Respondents' payment of the future response costs specified in Section XIX, Reimbursement Of Oversight and Response Costs, EPA covenants not to sue or to take administrative action against Respondents under Section 107(a) of CERCLA for recovery of future response costs incurred by the United States in connection with the work required to be performed by Respondents under this Consent Order. This Covenant not to sue shall take effect upon the receipt of EPA of the payments required by Section XIX, Reimbursement Of Oversight and Response Costs.

These covenants not to sue are conditioned upon the complete and satisfactory performance by Respondents of their obligations under this Consent Order. These covenants not to sue extend only to the Respondents and do not extend to any other person.

XXII. CONTRIBUTION PROTECTION

With regard to claims for contribution against Respondents for matters addressed in this Consent Order, the Parties hereto agree that the Respondents are entitled to protection from contribution actions or claims to the extent provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §9613(f)(2) and 9622(h)(4). Nothing in this Consent Order precludes the United States or the Respondents from asserting any claims, causes of action, or demands against any persons not party to this Consent Order for indemnification, contribution, or cost recovery.

XXIII. OTHER CLAIMS

Nothing in this Consent Order constitutes a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Site.

EPA reserves the right to bring an action against the Respondents pursuant to Section 107 of CERCLA for recovery of all response and oversight costs incurred by the United States related to this Consent Order and not reimbursed by Respondents, as well as any other past and future costs incurred by the United States in connection with response activities conducted pursuant to CERCLA at this site.

This Consent Order does not constitute a preauthorization of funds under Section lll(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2).

In entering into this Consent Order, Respondents waive any right to seek reimbursement under Section 106(b)(2) of CERCLA, 42 U.S.C. § 9606(b)(2), for any past costs associated with this Site, or any costs incurred in complying with this Order.

Respondents shall bear their own costs and attorney fees.

XXIV. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Consent Order will be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations unless an exemption from such requirements is specifically provided in this Consent Order, or made a part of this Consent Order by being incorporated herein at some later date.

XXV. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Respondents agree to indemnify and save and hold harmless the United States, its agencies, departments, officials, agents, employees, contractors, or representative, from any and all claims or causes of action arising from or on account of acts or omissions of Respondents, their officers, employees, receivers, trustees, agents, or assigns, in carrying out the activities pursuant to this Consent Order. The United States Government or any agency or authorized representative thereof shall not be held to be a party to any contract involving Respondents at or relating to the Site.

XXVI. PUBLIC COMMENT

Upon submittal to EPA of the Feasibility Study Final Report, EPA will make both the Remedial Investigation Final Report and the Feasibility Study Final Report and EPA's Proposed Plan available to the public for review and comment for, at a minimum, a thirty (30) day period, pursuant to EPA's Community Involvement Plan and the NCP. Following the public review and comment period, EPA will notify Respondents of the remedial action alternative selected for the Site.

XXVII. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

In consideration of the communications between Respondents and EPA prior to the issuance of this Consent Order concerning its terms, Respondents agree that there is no need for a settlement conference prior to the effective date of this Consent Order. Therefore, the effective date of this Consent Order will be the date on which it is signed by EPA. This Consent Order may be amended by mutual agreement of EPA and Respondents. Such amendments will be in writing and will have, as the effective date, that date on which such amendments are signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Consent Order.

Any reports, plans, specifications, schedules, and attachments required by this Consent Order are, upon approval by EPA, incorporated into this Consent Order. Any noncompliance with such EPA approved reports, plans, specifications, schedules, and attachments will be considered a failure to achieve the requirements of this Consent Order and will subject the Respondents to the provisions included in the "Force Majeure" and "Stipulated Penalties" sections (Sections XVI and XVII) of this Consent Order.

No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondents will be construed as relieving Respondents of their obligation to obtain such formal approval of EPA as may be required by this Consent Order.

XXVIII. NOTICE TO THE STATE

EPA has notified the State of Florida regarding the requirements of this Consent Order.

Upon completion of the RI/FS, pursuant to the requirements of Section 104(c)(2) of CERCLA, 42 U.S.C. § 9604(c)(2), EPA will notify the State of Florida before determining the appropriate remedial action to be taken at the Site.

XXIX. NOTICE OF COMPLETION

When EPA determines, after EPA's execution of the Record of Decision (ROD), that Respondents RI/FS have fully performed all work pursuant to and in accordance with this Consent Order, with the exception of any continuing obligations required by this Consent Order, including but not limited to record retention and payment of all future response costs as defined in Section XIX, EPA will provide notice to the Respondents. If EPA determines that any RI/FS actions have not been completed in accordance with this Consent Order, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents modify the Scope of Work if appropriate in order to correct such deficiencies. Deficiencies may include additional field work, which EPA determines is necessary as part of the RI/FS and which are in addition to the tasks detailed in the RI/FS Work Plan. The additional work shall be completed in accordance with the standards, specifications, and schedule determined or approved by EPA Respondents shall implement the modified and approved Scope of Work and shall submit a modified Final Report in accordance with the EPA notice. Failure by Respondents to implement the approved modified Scope of Work plan shall be a violation of this Consent Order.

XXX. TERMINATION AND SATISFACTION

This Consent Order shall terminate when the Respondents demonstrate in writing and certify to the satisfaction of EPA that all activities required under this Consent Order, including any additional work, payment of past costs, response and oversight costs, and any stipulated penalties demanded by EPA, have been performed and EPA has approved the certification. This notice shall not, however, terminate Respondents' obligation to comply with Sections XIV, XIX, and XX of this Consent Order.

The certification shall be signed by a responsible official representing each Respondent. Each representative shall make the following attestation: "I certify that the information contained in or accompanying this certification is true, accurate, and complete." For purposes of this Consent Order, a responsible official is a corporate official who is in charge of a principal business function.

RI/FS ADMINISTRATIVE ORDER ON CONSENT
FOR THE ORLANDO GASIFICATION SITE
ORLANDO, FLORIDA

IT IS SO AGREED:

BY: _____
Atlanta Gas Light Company Date 9/29/2003

RI/FS ADMINISTRATIVE ORDER ON CONSENT
FOR THE ORLANDO GASIFICATION SITE
ORLANDO, FLORIDA

IT IS SO AGREED:

BY: _____
Florida Power Corporation

Date September 29, 2003

RI/FS ADMINISTRATIVE ORDER ON CONSENT
FOR THE ORLANDO GASIFICATION SITE
ORLANDO, FLORIDA

IT IS SO AGREED:

BY: _____ 9/30/03
People's Gas System Date

RI/FS ADMINISTRATIVE ORDER ON CONSENT
FOR THE ORLANDO GASIFICATION SITE
ORLANDO, FLORIDA

IT IS SO AGREED AND ORDERED:

BY: _____ 9/30/03
Date

Carol Monell, Chief
South Site Management Branch
Waste Management Division
Region 4
U.S. Environmental Protection Agency

ATTACHMENT 1 - SCOPE OF WORK

SCOPE OF WORK FOR THE REMEDIAL INVESTIGATION AND FEASIBILITY STUDY AT THE ORLANDO GASIFICATION PLANT SITE

INTRODUCTION

The purpose of this Remedial Investigation/Feasibility Study (RI/FS) is to investigate the nature and extent of contamination at the Orlando Gasification Plant Site (the "Site"), assess the current and potential risk to public health, welfare, and the environment, and to develop and evaluate potential Remedial Action Alternatives. The RI and FS are interactive and shall be conducted concurrently so that the data collected in the RI influences the development of Remedial Action Alternatives in the FS, which in turn affects the data needs and the scope of Treatability Studies.

The Respondents shall conduct the RI/FS and produce an RI/FS Report that is in accordance with this Scope of Work, the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, (Interim Final) (U.S. EPA Office of Emergency and Remedial Response, October 1988) (the "RI/FS Guidance"), the National Oil and Hazardous Substances Pollution Contingency Plan (September 15, 1994) and other guidance used by EPA in conducting an RI/FS (the primary guidance documents are listed in Attachment A), as well as any additional requirements in the Administrative Order. The RI/FS Guidance describes the report format and the required report content. Pertinent RI/FS Guidance section numbers are denoted in parentheses throughout this Scope of Work. The Respondents shall furnish all necessary personnel, materials, and services needed, or incidental to, performing the RI/FS, except as otherwise specified in the Administrative Order.

At the completion of the RI/FS, EPA shall be responsible for the selection of a remedy to be implemented for the Site. EPA will document this selection of a remedy in a Record of Decision (ROD). The Remedial Action Alternative selected by EPA will meet the cleanup standards specified in §121 of SARA. That is, the selected remedial action will be protective of human health and the environment, will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws or regulations, and will address the statutory preference for on-site treatment which permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants as a principal element. The Final Remedial Investigation and Feasibility Study Report(s), as adopted by EPA, and the Baseline Risk Assessment will, with the remainder of the Administrative Record, form the basis for the selection of the remedy to be implemented for the Site and will provide the information necessary to support the development of the ROD.

As specified in §104(a)(1) of CERCLA, as amended by SARA, EPA must provide oversight of the Respondents' activities throughout the RI/FS. The Respondents shall support EPA's initiation

and conduct of activities related to the implementation of oversight activities. However, the primary responsibility for conducting an adequate RI/FS to enable and support the selection of a remedy shall lie with the Respondents. EPA review and approval of deliverables is a tool to assist this process and to satisfy, in part, EPA's responsibility to provide effective protection of public health, welfare, and the environment. EPA approval of a task or deliverable shall not be a guarantee as to the ultimate adequacy of such task or deliverable. A summary of the major deliverables that Respondents shall submit for the RI/FS is attached (Attachment B). In addition, a general schedule of RI/FS activities is also attached (Attachment C).

Attachment C serves as a general schedule for the Respondents to follow in the preparation of the RI/FS Work Plan schedule. Upon approval by EPA of the RI/FS Work Plan, the Work Plan schedule will supercede Attachment C. The final Work Plan schedule, however, may be amended as described in Paragraph H. of Section VIII.,Work to be Performed, of the Consent Order, if EPA determines that other tasks, which are in addition to the ones outlined in the final Work Plan, are necessary.

TASK 1 - SCOPING (RI/FS Guidance, Chapter 2)

Scoping is the initial planning process of the RI/FS and has been initiated by EPA to determine the site-specific objectives of the RI/FS prior to negotiations between the Respondents and EPA. Scoping is continued, repeated as necessary, and refined throughout the RI/FS process. In addition to developing the Site Objectives of the RI/FS, EPA has developed a Site Management Strategy. Consistent with the Site Management Strategy, the specific project scope shall be planned by the Respondents and EPA. The Respondents shall document the specific project scope in a Work Plan. Because the work required to perform an RI/FS is not fully known at the onset, and is phased in accordance with a Site's complexity and the amount of available information, it may be necessary to modify the Work Plan during the RI/FS to satisfy the objectives of the study.

The Site Objectives for the Orlando Gasification Site have been determined preliminarily, based on available information, to be the following:

1. Review of existing information pertaining to the Site. This review includes EPA Site Inspection Reports, the EPA Hazardous Ranking System Scoring package, reports from local, State and Federal agencies, court records, information from local businesses such as local well drillers and waste haulers and generators, facility records, and information from facility owners and employees and nearby citizens.

2. Review of relevant guidance (see attached references) to understand the remedial process. This information shall be used in performing the RI/FS and preparing all deliverables under this SOW.

3. Identification of all Federal and State applicable or relevant and appropriate requirements (ARARs).

4. Determination of the nature and lateral and vertical extent of contamination (waste types, concentrations and distributions) for all affected media including air, ground water, soil, surface water, and sediment, etc.

5. Performance of a well survey within a three-mile radius of the Site including determining water uses, well construction methods used, the number and age of users, and the volume and rate of water usage.

6. Identification and screening of potential treatment technologies along with containment/disposal requirements for residuals or untreated wastes.

7. Assembly of technologies into Remedial Action Alternatives and screening of alternatives.

8. Performance of bench or pilot Treatability Studies as necessary.

9. Detailed analysis of Remedial Action Alternatives. (End of Example)

The Site Management Strategy for the Orlando Gasification Site includes the following:

1. A complete investigation of the Site including any and all off-site contamination which may have been caused by contaminants originating from the Site.

2. Use of the RI to identify any other Potentially Responsible Parties that may be involved.

3. Evaluation of the Site as a whole, i.e., it is not anticipated at this time that the Site will be partitioned into separate operable units. It is anticipated that only one Record of Decision (ROD) will be prepared for the Site.

4. An expectation that no interim remedial measures are required.

5. EPA oversight of the Respondents' conduct of the work (i.e., the RI/FS and any response action) to ensure compliance with applicable laws, regulations and guidances and to ensure that the work proceeds in a timely fashion.

6. Respondents' preparation of the Human Health Baseline Risk Assessment and Ecological Baseline Risk Assessment.

7. EPA management of the Remedy Selection and Record of Decision phase with input from State Agencies, Natural Resource Trustees and the Public (including the Respondents).

When scoping the specific aspects of a project, the Respondents must meet with EPA to discuss all project planning decisions and special concerns associated with the Site. The following activities shall be performed by the Respondents as a function of the project planning process.

Site Background (2.2)

The Respondents shall gather and analyze the existing background information regarding the Site and shall conduct a visit to the Site to assist in planning the scope of the RI/FS.

Collect and Analyze Existing Data and Document the Need for Additional Data (2.2.2; 2.2.6; 2.2.7)

Before planning RI/FS activities, all existing Site data shall be thoroughly compiled and reviewed by the Respondents. Specifically, this compilation and review shall include currently available data relating to the varieties and quantities of hazardous substances at the Site and past disposal practices (what types of contaminants were dumped where, when, and by whom). This compilation and review shall also include results from any previous sampling or other investigations that may have been conducted. The Respondents shall refer to Table 2-1 of the RI/FS Guidance for a comprehensive list of data collection information sources. This information shall be utilized in determining additional data needed for Site Characterization, better defining potential applicable or relevant and appropriate requirements (ARARs), and developing a range of preliminarily identified Remedial Action Alternatives. Subject to EPA approval, Data Quality Objectives (DQOs) shall be established that specify the usefulness of existing data. Decisions on the necessary data and DQOs shall be made by EPA.

a. Project Planning (2.2)

Once the Respondents have collected and analyzed existing data, the specific project scope shall be planned. Project planning activities include those tasks described below as well as the development of specific required deliverables as described in paragraph c. The Respondents shall meet with EPA regarding the following activities and before the drafting of the scoping deliverables.

Refine the Site Objectives and Develop Preliminary Remedial Action Objectives and Alternatives (2.2.3)

Once existing information about the Site has been analyzed and a conceptual understanding of the potential risks posed by the Site has been obtained, the Respondents

shall review and, if necessary, refine the Site Objectives and develop preliminary remedial action objectives for each actually or potentially contaminated medium. Any revised Site Objectives shall be documented in a technical memorandum and are subject to EPA approval prior to development of the other scoping deliverables. The Respondents shall then identify a preliminary range of broadly defined potential Remedial Action Alternatives and associated technologies. The range of potential alternatives shall include, at a minimum, alternatives in which treatment is used to reduce the toxicity, mobility, or volume of the waste, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; alternatives that involve containment and treatment components; alternatives that involve containment with little or no treatment; and a no-action alternative.

Document the Need for Treatability Studies (2.2.4)

If remedial actions involving treatment have been identified by the Respondents or EPA, Treatability Studies shall be required except where the Respondents can demonstrate to EPA's satisfaction that they are not needed. Where Treatability Studies are needed, identification of possible technologies and screening shall be done and the results submitted with the RI/FS Work Plan. Initial Treatability Study activities (such as research and study design) shall be planned to occur concurrently with Site Characterization activities (see Tasks 3 and 4).

Begin Preliminary Identification of Potential ARARs (2.2.5)

The Respondents shall conduct a preliminary identification of potential State and Federal ARARs (chemical-specific, location-specific, and action-specific) to assist in the refinement of remedial action objectives and the initial identification of Remedial Action Alternatives and ARARs associated with particular actions. ARAR identification shall continue as conditions and contaminants at the Site and Remedial Action Alternatives are better defined.

b. Scoping Deliverables (2.3)

At the conclusion of the project planning phase, the Respondents shall submit an RI/FS Work Plan, a Sampling and Analysis Plan, and a Health and Safety Plan. The RI/FS Work Plan and Sampling and Analysis Plan must be reviewed and approved and the Health and Safety Plan reviewed by EPA prior to the initiation of field activities.

RI/FS Work Plan (2.3.1)

A Work Plan documenting the decisions and evaluations completed during the scoping process shall be submitted to EPA for review and approval. The Work Plan shall be developed in conjunction with the Sampling and Analysis Plan and the Health and Safety

Plan, although each plan may be delivered under separate cover. The Work Plan shall include a comprehensive description of the work to be performed, the media to be investigated (i.e., Air, Ground Water, Surface Water, Surface and Subsurface Soils, and Sediments, etc.), the methodologies to be utilized, and the rationale for the selection of each methodology. A comprehensive schedule for completion of each major activity and submission of each deliverable shall also be included, and, to the extent practicable, it should be consistent with the general schedule (Attachment C).

Specifically, the Work Plan shall present the following:

- A statement of the problem(s) and potential problem(s) posed by the Site and the objectives of the RI/FS.

- A background summary setting forth the following:

    - a description of the Site including the geographic location, and, to the extent possible, a description of the physiography, hydrology, geology, demographics, and the ecological, cultural, and natural resource features of the Site;

    - a synopsis of the history of the Site including a summary of past disposal practices and a description of previous responses that have been conducted by local, State, Federal, or private parties at the Site;

    - a summary of the existing data in terms of physical and chemical characteristics of the contaminants identified and their distribution among the environmental media at the Site.

- A description of the Site Management Strategy developed by EPA during scoping as discussed previously in this SOW and as may be modified with EPA's approval;

- A preliminary identification of Remedial Action Alternatives and data needs for evaluation of Remedial Action Alternatives. This preliminary identification shall reflect coordination with Treatability Study requirements (see Tasks 1 and 4).

- A process for identifying Federal and State ARARs (chemical-specific, location-specific, and action-specific).

- A detailed description of the tasks to be performed, information needed for each task and for EPA's Baseline Risk Assessment, information to be produced during and at the conclusion of each task, and a description of the work products that shall be submitted to EPA. This description must also include the deliverables set forth in the remainder of this Scope of Work.

- A schedule for each of the required activities which, to the extent practicable, is consistent with the general schedule (Attachment C) and the RI/FS Guidance.

- A project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, data format, and backup data management), monthly reports to EPA, and meetings and presentations to EPA at the conclusion of each major phase of the RI/FS.

The Respondents shall refer to Appendix B of the RI/FS Guidance for a comprehensive description of the contents of the required Work Plan.

Because of the unknown nature of the Site and iterative nature of the RI/FS, additional data requirements may be identified throughout the RI/FS process. The Respondents shall submit a technical memorandum documenting any need for additional data along with the proposed DQOs whenever such requirements are identified. In any event, the Respondents are responsible for fulfilling additional data and analysis needs identified by EPA consistent with the general scope and objectives of this RI/FS and the Administrative Order.

Sampling and Analysis Plan (2.3.2)

The Respondents shall prepare a Sampling and Analysis Plan (SAP) to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data generated will meet the DQOs established. The SAP provides a mechanism for planning field activities and consists of a Field Sampling and Analysis Plan (FSAP) and a Quality Assurance Project Plan (QAPP).

The FSAP shall define in detail the sampling and data-gathering methods that shall be used on the project. It shall include sampling objectives, sample location (horizontal and vertical) and frequency, sampling equipment and procedures, and sample handling and analysis. The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that shall be used to achieve the desired DQOs. The QAPP will be prepared in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R-5)"(EPA/240/B-01/003, March 2001) and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February 1998). In addition, the QAPP shall address personnel qualifications, sampling procedures, sample custody, analytical procedures, and data reduction, validation, and reporting. These procedures must be consistent with the Region 4 Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001). Field personnel shall be available for EPA QA/QC training and orientation, as required.

The Respondents shall demonstrate, in advance and to EPA's satisfaction, that each laboratory it may use is qualified to conduct the proposed work. This demonstration must include use of methods and analytical protocols for the chemicals of concern (typically the Target Compound List (TCL) and the Target Analyte List (TAL)) in the media of interest within detection and quantification limits consistent with both QA/QC procedures and DQOs approved by EPA in the QAPP for the Site. The laboratory must have and follow an EPA-approved QA program. The Respondents shall provide assurances that EPA has access to laboratory personnel, equipment and records for sample collection, transportation, and analysis. EPA may require that the Respondents submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment, and material specifications. In addition, EPA may require submittal of data packages equivalent to those generated in the EPA Contract Laboratory Program (CLP) and may require laboratory analysis of performance samples (blank and/or spike samples) in sufficient number to determine the capabilities of the laboratory. If a laboratory not currently participating in the CLP is selected, methods consistent with CLP methods that would be used at this Site for the purposes proposed and QA/QC procedures approved by EPA shall be used. The respondent shall only use laboratories which have a documented Quality Assurance Program which complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995) and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01-002, March 2001) or equivalent documentation as determined by EPA. In addition, if the laboratory is not in the CLP program, a laboratory QA program must be submitted for EPA review and approval granted prior to the shipment of Site samples to that laboratory for analysis.

Health and Safety Plan (2.3.3)

A Health and Safety Plan shall be prepared in conformance with the Respondents' health and safety program, and in compliance with OSHA regulations and protocols. The Health and Safety Plan shall include the eleven elements described in the RI/FS Guidance, such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and site control. It should be noted that EPA does not "approve" the Respondents' Health and Safety Plan, but rather EPA reviews it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment.

TASK 2 - COMMUNITY RELATIONS (2.3.4)

The development and implementation of community relations activities are the responsibility of EPA. The critical community relations planning steps performed by EPA include conducting community interviews and developing a Community Involvement Plan. Although implementation of the Community Involvement Plan is the responsibility of EPA, if requested by

EPA, the Respondents shall assist EPA by providing information regarding the history of the Site and participating in public meetings.

EPA will prepare a Community Involvement Plan, in accordance with EPA guidance and the NCP. Within thirty (30) days of a request from EPA, Respondents must prepare a plan (hereinafter referred to as the Technical Assistance Plan or TAP) for providing and administering up to $50,000.00 of Respondents' funds to be used by selected representatives of the community for the purpose of providing technical assistance during the response activities conducted pursuant to the Consent Order at this Site and through EPA's issuance of the Record of Decision (ROD) for this Site. Respondents will provide and administer any additional amounts needed if the selected community group demonstrates such a need, as determined by EPA. EPA may approve, disapprove, require revisions to, or modify the draft TAP in whole or in part. If EPA requires revisions, Respondents shall submit a revised TAP within thirty (30) days of receipt of EPA's notification of the required revisions. Respondents shall implement the TAP as approved in writing by EPA. Once approved, or approved with modifications, the TAP and any subsequent modifications shall be incorporated into and become fully enforceable under this Consent Order.

As part of the Technical Assistance Plan, the Respondents must propose a method, including an application process and eligibility criteria, for awarding and administering the funds above. Any eligible citizen group must be: 1) a representative group of individuals potentially affected by the Site, 2) incorporated as a nonprofit organization for the purposes of the Site or otherwise established as a charitable organization that operates within the geographical range of the Site and is already incorporated as a nonprofit organization, and 3) able to demonstrate its capability to adequately and responsible manage the funds awarded. Any group is ineligible if it is 1) potentially responsible for contamination problems at the Site, 2) an academic institution, 3) a political subdivision, 4) a group whose ability to represent the interests of affected individuals might be limited as a result of receiving paid services from a PRP, or 5) a group established or sustained by government entities, a Potentially Responsible Party, or any ineligible entity. Funds may be awarded to only one qualified group for purposes of this Consent Order and Statement of Work. In addition, at a minimum, the technical advisor must possess the following credentials: 1) Demonstrated knowledge of hazardous or toxic wastes issues by proven work experience in such fields in excess of five (5) years; 2) a bachelor of science in a relevant discipline (e.g., biochemistry, toxicology, environmental sciences, engineering); 3) Ability to translate technical information into terms understandable to lay persons; 4) Experience in making technical presentation in a public meeting or hearing setting; and 5) Demonstrated writing skills. Any unobligated funds shall revert to the Respondents upon termination of the AOC.

For purposes of resolving any disputes that may arise between the Respondents, the technical advisor, and/or the selected citizen group concerning the administration and/or use of the funds under the TAP, the Respondents shall, as part of the TAP, propose a method for resolution, which will include the use of binding arbitration. As part of the dispute resolution proposal, the Respondent must provide the method for selecting an arbitrator acceptable to all parties involved

in the dispute. Additionally, the dispute resolution provision must require that before the services of an arbitrator are invoked, the parties must comply with the following procedures: (1) the party that raises a complaint must submit that complaint in writing to the party who is the subject of the complaint; (2) the recipient of the complaint must provide the first party with a written response within fifteen (15) calendar days of receipt of the complaint; (3) the parties then have fifteen (15) calendar days to resolve the dispute; and (4) if the disagreement cannot be resolved at this level, then the services of an arbitrator will be sought. The written decision of the arbitrator will be the final decision and binding on all parties subject to the arbitration.

The Respondents may hire a third party to coordinate and administer the TAP (hereinafter referred to as the TAP Coordinator). However, any such TAP Coordinator must be approved by EPA. It is the Respondent's burden to demonstrate that the TAP Coordinator is qualified to perform this task. If the Respondents opt to hire a TAP Coordinator, that person's name, title, and qualifications must be submitted in writing to EPA within fifteen (15) days of EPA's request to Respondents to prepare a TAP. Additionally, within fifteen (15) days of EPA's request to Respondents to prepare a TAP, Respondents must identify in writing to EPA an outreach coordinator who will be responsive to the public's inquiries and questions about the Site, including information about the application process and administration of the TAP. In addition, the Respondents must provide EPA quarterly progress reports regarding the implementation of the TAP.

The extent of the Respondents' involvement in community relations activities is left to the discretion of EPA. In addition to devising and administering the Technical Assistance Plan, other community relations responsibilities which EPA may assign to the Respondents, if any, shall be specified in the community relations plan. All community relations activities conducted by Respondents shall be subject to oversight by EPA.

TASK 3 - SITE CHARACTERIZATION (RI/FS Guidance, Chapter 3)

As part of the RI, the Respondents shall perform the activities described in this task, including the preparation of a Site Characterization Summary and an RI Report. The overall objective of Site Characterization is to describe areas of the Site that may pose a threat to human health or the environment. This objective is accomplished by first determining physiography, geology, and hydrology of the Site. Surface and subsurface pathways of migration shall also be defined. The Respondents shall identify the sources of contamination and define the nature, extent, and volume of the sources of contamination, including their physical and chemical constituents as well as their concentrations at incremental locations in the affected media. The Respondents shall also investigate the extent of migration of this contamination as well as its volume and any changes in its physical or chemical characteristics. This investigation will provide for a comprehensive understanding of the nature and extent of contamination at the Site. Using this information, contaminant fate and transport shall be determined and projected.

During this phase of the RI/FS, the Work Plan, SAP, and Health and Safety Plan shall be implemented. Field data shall be collected and analyzed to provide the information required to accomplish the objectives of the study. The Respondents shall notify EPA at least two weeks in advance of the field work regarding the planned dates for field activities, including installation of monitoring wells, installation and calibration of equipment, pump tests, field lay out of any sampling grid, excavation, sampling and analysis activities, and other field investigation activities. The Respondents shall demonstrate that the laboratory and type of laboratory analyses that will be utilized during Site Characterization meet the specific QA/QC requirements and the DQOs as specified in the SAP. In view of the unknown conditions at the Site, activities are often iterative and, to satisfy the objectives of the RI/FS, it may be necessary for the Respondents to supplement the work specified in the initial Work Plan. In addition to the deliverables below, the Respondents shall provide a monthly progress report and participate in meetings with EPA at major points in the RI/FS.

a. Field Investigation (3.2)

The field investigation includes the gathering of data to define physical characteristics, sources of contamination, and the nature and extent of contamination at the Site. These activities shall be performed by the Respondents in accordance with the Work Plan and SAP. At a minimum, this investigation shall include the following activities:

Implementing and Documenting Field Support Activities (3.2.1)

The Respondents shall initiate field support activities following approval of the Work Plan and SAP. Field support activities may include obtaining access to the Site, property surveys, scheduling, and procuring equipment, office space, laboratory services, utility services and/or contractors. The Respondents shall notify EPA at least two weeks prior to initiating field support activities so that EPA may adequately schedule oversight tasks. The Respondents shall also notify EPA in writing upon completion of field support activities.

Investigating and Defining Site Physical and Biological Characteristics (3.2.2)

The Respondents shall collect data on the physical and biological characteristics of the Site and its surrounding areas including the physiography, geology, and hydrology, and specific physical characteristics identified in the Work Plan. This information shall be ascertained through a combination of physical measurements, observations, and sampling efforts and shall be utilized to define potential transport pathways and receptor populations. In defining the physical characteristics of the Site, the Respondents shall also obtain sufficient engineering data (such as pumping characteristics, soil particle size, permeability, etc.) for the projection of contaminant fate and transport and the development and screening of Remedial Action Alternatives, including information necessary to evaluate treatment technologies.

Defining Sources of Contamination (3.2.3)

The Respondents shall locate each source of contamination. For each location, the lateral and vertical extent of contamination shall be determined by sampling at incremental depths on a sampling grid or in another organized fashion approved by EPA. The physical characteristics and chemical constituents and their concentrations shall be determined for all known and discovered sources of contamination. The Respondents shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QAPP and DQOs. Sources of contamination shall be analyzed for the potential of contaminant release (e.g., long term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information necessary to evaluate treatment technologies.

Describing the Nature and Extent of Contamination (3.2.4)

The Respondents shall gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the Respondents shall utilize the information on Site physical characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The Respondents shall then implement an iterative monitoring program and any study program identified in the Work Plan or SAP such that, by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at the Site can be determined. In addition, the Respondents shall gather data for calculations of contaminant fate and transport. This process is continued until the lateral and vertical extent of contamination has been determined to the contaminant concentrations consistent with the established DQOs set forth in the QAPP. Respondents shall use the information on the nature and extent of contamination to determine the level of risk presented by the Site and to help to determine aspects of the appropriate Remedial Action Alternatives to be evaluated.

b. Data Analyses (3.4)

Evaluate Site Characteristics (3.4.1)

The Respondents shall analyze and evaluate the data to describe: (1) physical and biological characteristics of the Site; (2) contaminant source characteristics; (3) nature and extent of contamination; and (4) contaminant fate and transport. The information on physical and biological characteristics, source characteristics, and nature and extent of contamination shall be used in the analysis of contaminant fate and transport. The evaluation shall include the actual and potential magnitude of releases from the sources and lateral and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified to EPA in

a technical memorandum prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA together with a sensitivity analysis. All models shall be approved by EPA prior to their use. The RI data shall be presented in a computer disk format utilizing Lotus 1-2-3 or other equivalent commonly used computer software. Respondents shall identify and then collect any data necessary to fill data gaps that are present during preparation of the Human Health or Ecological Baseline Risk Assessments (see "Guidance for Data Useability in Risk Assessment," U.S. EPA, Office of Emergency and Remedial Response, October 1990, OSWER Directive No. 9285.7-05). Also, this evaluation shall provide any information relevant to characteristics of the Site necessary for evaluation of the need for remedial action in the Human Health and Ecological Baseline Risk Assessments, the development and evaluation of Remedial Action Alternatives, and the refinement and identification of ARARs. Analyses of data collected for Site Characterization shall meet the DQOs developed in the QAPP.

c. Data Management Procedures (3.5)

The Respondents shall consistently document the quality and validity of field and laboratory data compiled during the RI. At a minimum, this documentation shall include the following activities:

Documenting Field Activities (3.5.1)

Information gathered during characterization of the Site shall be consistently documented and adequately recorded by the Respondents in well maintained field logs and laboratory reports. The method(s) of documentation must be specified in the Work Plan and/or the SAP. Field logs must be utilized to document observations, calibrations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, nonconformity events, corrective measures, and/or data deficiencies. Supporting documentation described as the "CLP Data Package" must be provided with the sample analysis for all samples split or duplicated with EPA.

Maintaining Sample Management and Tracking (3.5.2; 3.5.3)

The Respondents shall maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the development and evaluation of the Baseline Risk Assessment and Remedial Action Alternatives. Analytical results developed under the Work Plan shall not be included in any characterization reports for the Site unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the Respondents shall establish a data security system to safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation.

d. Site Characterization Deliverables (3.7)

The Respondents shall prepare the Preliminary Site Characterization Summary and the Remedial Investigation Report.

Preliminary Site Characterization Summary (3.7.2)

After completing field sampling and analysis, the Respondents shall prepare a concise Site Characterization Summary. This summary shall review the investigative activities that have taken place and describe and display data for the Site documenting the location and characteristics of surface and subsurface features and contamination at the Site including the affected medium, location, types, physical state, and quantity and concentrations of contaminants. In addition, the location, dimensions, physical condition, and concentrations of each contaminant throughout each source and the extent of contaminant migration through each of the affected media shall be documented.

Remedial Investigation (RI) Report (3.7.3)

The Respondents shall prepare and submit a Draft RI Report to EPA for review and approval. This report shall summarize results of field activities to characterize the Site, sources of contamination, nature and extent of contamination, and the fate and transport of contaminants. The Respondents shall refer to the RI/FS Guidance for an outline of the report format and contents. Following comment by EPA, the Respondents shall prepare a Final RI Report which satisfactorily addresses EPA's comments.

TASK 4 - TREATABILITY STUDIES (RI/FS Guidance, Chapter 5)

Treatability Studies shall be performed by the Respondents to assist in the detailed analysis of alternatives. If applicable, study results and operating conditions will later be used in the detailed design of the selected remedial technology. The following activities shall be performed by the Respondents.

a. Determination of Candidate Technologies and the Need for Treatability Studies (5.2; 5.4)

The Respondents shall identify in a technical memorandum, subject to EPA review and comment, candidate technologies for a Treatability Studies program during project planning (Task 1). The listing of candidate technologies shall cover the range of technologies required for alternatives analysis (Task 6a). The specific data requirements for the Treatability Studies program shall be determined and refined during Site Characterization and the development and screening of Remedial Action Alternatives (Tasks 3 and 7 of the SOW, respectively).

Conduct Literature Survey and Determine the Need for Treatability Studies (5.2)

The Respondents shall conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. If practical candidate technologies have not been sufficiently demonstrated, or cannot be adequately evaluated for the Site on the basis of available information, Treatability Studies shall be conducted. EPA shall determine whether Treatability Studies will be required.

Evaluate Treatability Studies (5.4)

Where EPA has determined that Treatability Studies are required, the Respondents and EPA shall decide on the type of Treatability Studies to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as to perform testing for various operating conditions, the decision to perform pilot testing shall be made as early in the process as possible to minimize potential delays of the FS. To assure that a Treatability Study program is completed on time, and with accurate results, the Respondents shall submit either a separate Treatability Study Work Plan or an amendment to the original RI/FS Work Plan for EPA review and approval.

b. Treatability Study Deliverables (5.5; 5.6; 5.8)

In addition to the memorandum identifying candidate technologies, the deliverables that are required when Treatability Studies are to be conducted include a Treatability Study Work Plan, a Treatability Study Sampling and Analysis Plan, and a Final Treatability Study Evaluation Report. EPA may also require a Treatability Study Health and Safety Plan, where appropriate.

Treatability Study Work Plan (5.5)

The Respondents shall prepare a Treatability Study Work Plan or amendment to the original RI/FS Work Plan for EPA review and approval. This Plan shall describe the background of the Site, remedial technologies to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The DQOs for Treatability Studies shall be documented as well. If pilot-scale Treatability Studies are to be performed, the Treatability Study Work Plan shall describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, and operating conditions to be tested. If testing is to be performed off-site, permitting requirements must be addressed.

Treatability Study Sampling and Analysis Plan (5.5)

If the original QAPP or FSAP is not adequate for defining the activities to be performed during the Treatability Studies, a separate Treatability Study SAP or amendment to the original RI/FS SAP shall be prepared by the Respondents for EPA review and approval. It

shall be designed to monitor pilot plant performance. Task 1b of this Scope of Work provides additional information on the requirements of the SAP.

Treatability Study Health and Safety Plan (5.5)

If the original RI/FS Health and Safety Plan is not adequate for defining the activities to be performed during the Treatability Studies, a separate or amended Health and Safety Plan shall be developed by the Respondents. Task 1b of this Scope of Work provides additional information on the requirements of the Health and Safety Plan. EPA does not "approve" the Treatability Study Health and Safety Plan.

Treatability Study Evaluation Report (5.6)

Following completion of Treatability Studies, the Respondents shall analyze and interpret the testing results in a technical report to EPA. Depending on the sequence of activities, this report may be a part of the RI/FS Report or a separate deliverable. The report shall evaluate each technology's effectiveness, implementability, cost, and actual results as compared with predicted results. The report shall also evaluate full-scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

TASK 5 - BASELINE RISK ASSESSMENT

The Respondents shall prepare a Baseline Risk Assessment (BRA) which identifies hazardous substances present, describes their toxic effects, describes contaminant fate and transport, evaluates the potential for human exposure, and assesses the risk of potential impact or threats of site chemicals on human health. In addition, the Respondents shall prepare an ERA which assesses the risk of potential impacts or threats to the ecological receptors (including both flora and fauna). The BRA and ERA will provide EPA a basis for determining whether or not remedial action is necessary, a justification for performing any remedial action that may be required, and risk basis for clean up goals.

The Respondents shall develop the human health portion of the BRA in accordance with EPA's Interim Final Risk Assessment Guidance for Superfund (RAGS) - Volume I - Human Health Evaluation Manual (Part A) (December 1989), Development of Risk-Based Remediation Goals (Part B) (December 1991), and Risk Assessment Guidance for Superfund: Volume 1 - Human Health Evaluation (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments, Final, December 2001). These documents describe and illustrate the process of gathering and assessing human health risk information in addition to developing remediation goals. Other resources that the Respondents should utilize when performing the BRA include: Exposure Factors Handbook (EPA/600/P-95/002Fa, August 1997); Land Use in the CERCLA Remedy Selection Process, OSWER Directive 9355.7-04, May 25, 1995; Soil Screening Guidance User's Guide, OSWER Directive 9355.4-3, April 1996; Integrated Risk Information

System (IRIS); the Health Effects Assessment Summary Tables (HEAST); the Supplemental Guidance to RAGS Region 4 Bulletins-Human Risk Assessment. For preparing the ERA, the Respondents shall utilize the Supplemental Guidance to RAGS Region 4 Bulletins-Ecological Risk Assessment, (November 1995) and the Ecological Risk Assessment Guidance for Superfund Process for Design and Conducting the Ecological Risk Assessment, (June 1997). EPA shall identify other guidance for human health and ecological assessment as necessary.

EPA has recently issued a Part D to the RAGS guidance entitled Interim Risk Assessment Guidance for Superfund: Volume 1 - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments) hereafter referred to as RAGS Part D. This guidance document should be used in the development of the human health portion of the BRA. Even though the RAGS Part D guidance suggests that interim deliverables be provided before the draft BRA is delivered, this SOW does not require these interim deliverables. The information that would be contained in these deliverables should be provided in the draft BRA.

A Draft Human Health Baseline Risk Assessment Report and a Draft Ecological Risk Characterization shall be submitted at the completion of Site Characterization and included in the Draft RI Report (see Task 3). Following comment by EPA, the Respondents shall prepare a Final Human Health Baseline Risk Assessment Report and a Final Ecological Risk Characterization Report which shall be included in the Final RI Report.

1. Human Health Baseline Risk Assessment (BRA)

The BRA process consists of the four components listed below. During the scoping of the work assignment, the Respondent shall discuss with EPA the format of the BRA Report as well as any additional references to be utilized during the BRA.

A. Identification of Chemicals of Potential Concern (COPCs):

The Respondents shall review the information that is available on the hazardous substances present at the site and shall identify the chemicals of potential concerns (COPCs) following the guidance provided by EPA Region 4 and RAGS Part D. The data shall be tabulated according to the guidance provided in RAGS Part D. This portion of the BRA shall include a discussion of the rationale for the identification of the COPCs.

B. Exposure Assessment and Documentation:

The Respondent shall identify actual and potential exposure points and pathways. Exposure assumptions must be supported with data and must be consistent with Agency policy. For each exposure point, the release source, the transport media (e.g., ground water, surface water, air, etc.) and the exposure route (oral, inhalation, dermal) must be clearly delineated in a Site Conceptual model (RI/FS Guidance Figure 2-2). Both present

and future risks at the Site must be developed and presented, using reasonable maximum exposure (RME)scenarios. The Human Health Evaluation Manual, Part A and the supplemental guidance entitled Standard Default Exposure Factors (OSWER Directive 9285.6-03) should be consulted in development of exposure assumptions. EPA referenced default exposure assumptions or default assumptions from other approved sources should be used when site specific data are not available. The Respondent shall include, within the BRA, the exposure scenarios with a description of the assumptions made and the use of data and a figure showing the site conceptual model. If it is appropriate to use fate and transport models to estimate the exposure concentration at points spatially separate from monitoring points or media not sampled, these models shall be presented and discussed. Representative data must be utilized and the limitations and uncertainties associated with the models must be documented. The Exposure Assessment Section in the BRA shall contain exposure concentrations typically based on the 95 percent upper confidence limit on the arithmetic average. The exposure concentration shall be used with the exposure assumptions to determine chemical-specific intake levels for each exposure scenario.

C. Toxicity Assessment and Documentation:

The Respondents shall utilize the information in IRIS, HEAST, and if needed, other similar data bases and other information sources as discussed in the Region 4 guidance, to provide a toxicity assessment of the COPCS. Consult RAGS Part D and Region 4's guidance for specific guidance on what information is needed. This assessment shall include the types of adverse health effects associated with chemical exposures (including potential carcinogenicity or the toxic effect observed in deriving the Reference Dose (RfD)), the relationships between magnitude of exposures and adverse effects, and the related uncertainties of contaminant toxicity (e.g., the weight of evidence for a chemical's carcinogenicity or the degree of confidence in the RfD).

D. Risk Characterization:

The Respondents shall integrate the information developed during the exposure and toxicity assessments, to characterize and quantify the current and potential risks to human health and the environment posed by the Site. The risk characterization must identify the uncertainties associated with contaminants, toxicities, and exposure assumptions and other guidance provided in the February 1995 Guidance for Risk Characterization from EPA's Science Policy Council. Consult RAGS Part D and Region 4's guidance for specific guidance on what information is needed.

The human health baseline risk assessment should also include a "central tendency" analysis for the contaminants of concern (COCs) that are identified. This analysis can be used as information to provide perspective for the risk manager and compliance with Agency guidance. Any risk values other than those representing the reasonable maximum exposure (RME) (i.e., central

tendency) should be placed in an Appendix of the BRA. The Supplemental Guidance to RAGS: Region 4 Bulletins (November, 1995) should be consulted for further guidance on central tendency issues.

2. Ecological Baseline Risk Assessment (ERA)

The Respondents shall evaluate and assess the risk to the ecological receptors posed by site contaminants. The primary Agency guidance to be used in the evaluation the site for ecological risks are: Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (EPA 540-R-97-006, June 2, 1997), known as ERAGS, and Region 4's Regional Guidance, Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment.

The Screening-Level Ecological Risk Assessment (Steps 1 and 2) is the preliminary phase of the risk assessment process which is used to identify contaminants (COPCs) that warrant further consideration in the Baseline Risk Assessment Problem Formulation (Step 3). The Screening-Level Ecological Risk Assessment is composed of the following tasks:

A. Screening-Level Ecological Risk Assessment (Step 1):

The Respondent shall review the existing information (Preliminary Assessment, Site Investigation, Expanded Site Investigation, and additional information), describe the ecological setting (utilizing Appendix B - Representative Sampling Guidance Document, Volume 3: Ecological, of the ERAGS Process document) and identify contaminants known or suspected to exist at the site.

B. Screening-Level Exposure Estimate and Risk Calculation (Step 2):

The Respondent shall compare the maximum concentrations present in each media to Region 4 Ecological Screening Values and calculate Screening Hazard Quotients. Three tables should be developed for each media to be included in the screening assessment: 1) a list of contaminants whose maximum concentration exceeds the Ecological Screening Values, 2) a list of contaminants whose maximum concentration does not exceed the screening values but whose Practical Quantification Limit exceeds the Ecological Screening Values, and 3) a list of contaminants for which there are no screening values. The document containing these first two steps of the ERA process will be submitted to the Agency for review and approval. If, upon approval, the screening assessment demonstrates the potential for unacceptable risks to ecological receptors, then the ERA process will continue with the following steps.

C. Baseline Risk Assessment Problem Formulation (Step 3):

The Respondents shall develop the problem formulation by refining the ecological COPCs (e.g. comparison to background/reference location contaminant concentrations, frequency of detections, comparison to other appropriate comparison values, magnitude of exceedences, pattern of exceedences); further characterizing ecological effects of contaminants; reviewing and refining information on contaminant fate and transport, complete exposure pathways, and ecosystems potentially at risk; selecting assessment endpoints; and developing a conceptual model with risk questions that the site investigation will address. The document containing this step will be submitted to the Agency for review and approval.

D. Study Design and Data Quality Objective Process (Step 4):

The Respondents shall develop a study design defining the measurement endpoints, data quality objectives and statistical considerations, and methods of analysis; and a work plan and sampling and analysis plan for the ecological investigation outlining the data that will collected during the remedial investigation and the risk assessment methods which be used in interpreting the data. This document shall be submitted to the Agency for review and approval.

E. Field Verification of Sampling Design (Step 5):

The Respondents shall verify the field collection methods to assure the implementability of the sampling plan. If required, modifications to the study design, work plan, or sampling and analysis plan shall be submitted to the Agency review and approval.

F. Site Investigation and Analysis Phase (Step 6):

The Respondents shall conduct the site investigation to collect the data to be used in the analysis phase as described in the work plan and the sampling and analysis plan. Any deviation from the work plan should be documented and submitted to the Agency for review and approval.

G. Risk Characterization (Step 7):

The Respondents shall develop the Risk Characterization integrating the results of the exposure profile and exposure-response analyses. The results of this characterization will determine if there are unacceptable risks posed to ecological receptors by site-related contaminants. If there are unacceptable risks, contaminant levels protective of the assessment endpoints should be determined and reported as remedial goal options (RGOs). A document containing the Risk Characterization and the RGO development shall be submitted to the Agency for review and approval.

H. Risk Management (Step 8):

The Respondents shall address the ecological impacts of the remedial options in the Feasibility Study. This document shall be submitted to the Agency for review and approval.

3. Remedial Goal Options:

The BRA shall include a section which outlines the RGOs for the chemicals and media of concern that are protective of human health, the ecology, and ground water. This section should include both ARARs and health-based cleanup goals. This section should contain a table with media cleanup levels for each chemical that contributes to a pathway that exceeds a $1x10^{-4}$ risk (or whatever risk level is chosen as the remediation trigger by the risk manager) or an HI of 1 or greater or exceeds a state or federal chemical-specific ARAR for each scenario evaluated in the BRA. Chemicals need not be included if their individual carcinogenic risk contribution to a pathway is less than $1x10^{-6}$ or their noncarcinogenic HQ is less than 0.1. The table should include the $1x10^{-4}$, $1x10^{-5}$, and $1x10^{-6}$ risk levels for each chemical, media and scenario (land use) and the HQ of 0.1, 1, and 3 levels as well as any chemical-specific ARAR values (state and federal). The values should be developed by combining the exposure levels to each chemical by a receptor from all appropriate routes of exposure (i.e. inhalation, ingestion and dermal) within a pathway and rearranging the site-specific average-dose equations used in the BRA to solve for the concentration term. The resulting table should present one set of RGOs for each media and each land use (e.g., residential (child and adult) and industrial).

The purpose is to provide the RPM with the maximum risk-related media level options on which to develop remediation aspects of the Feasibility Study and Proposed Plan. RAGS Part B is not appropriate for the development of RGOs since site specific exposure information is available at this stage in the risk assessment process. These site specific RGOs replace the generic PRGs in providing the final risk-based guidance for remedial action. The results of the ecological risk assessment should be the identification of remediation goals for the ecological COCs that would be protective for the receptors. These remediation goal options should be presented for the relevant environmental media.

4. Report Preparation

The Human Health and Ecological Baseline Risk Assessment reports shall be submitted in accordance with the schedule in Attachment C.

The Human Health Baseline Risk Assessment Report and the Ecological Baseline Risk Assessment Reports shall follow the principles established in the risk assessment guidance

documents. A discussion of sources of uncertainty, data gaps, incomplete toxicity information, and modeling characteristics must be included. The Respondent shall refer to page 9-4 of RAGS Part A for an outline of the Human Health Baseline Risk Assessment report format. The Respondent shall refer to the Ecological Risk Assessment Guidance for Superfund process for requirements of the scientific/management decision point deliverables. The reports shall be revised, as necessary, based on EPA's comments and submitted to EPA for approval.

TASK 6 - REUSE ASSESSMENT

The Respondents shall effect the preparation of a Reuse Assessment for the site pursuant to EPA guidance in Reuse Assessments: A Tool to Implement the Superfund Land Use Directive, OSWER Directive No. 9355.7-06P, June 2001 and Land Use in the CERCLA Remedy Selection Process, OSWER Directive No. 9355.7-04, May 1995. The purpose of the Reuse Assessment shall be to provide a prediction of the reasonably anticipated future land use of the Site to provide an appropriate basis for EPA risk and remedy decisions at the site. In general, land use decisions are the responsibility of local government, and the Respondents shall enlist the assistance of the appropriate local officials in developing the Reuse Assessment. Since this Site is located in a historically industrial/commercial area, the Reuse Assessment should summarize such facts about the Site and the history of the area, and attach any relevant zoning documentation. The Respondents shall submit a draft Reuse Assessment with the draft RI Report, either as a section of the report, an appendix, or under separate cover. A final Reuse Assessment shall be submitted with the final RI Report which addresses any EPA comments on the draft.

TASK 7 - DEVELOPMENT AND SCREENING OF REMEDIAL ACTION ALTERNATIVES (RI/FS Guidance, Chapter 4)

The development and screening of Remedial Action Alternatives is performed to select an appropriate range of waste management options to be evaluated. This range of options shall include, at a minimum, alternatives in which treatment is used to reduce the toxicity, mobility, or volume of the waste, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; alternatives that involve containment and treatment components; alternatives that involve containment with little or no treatment; and a no-action alternative. The following activities shall be performed by the Respondents as a function of the development and screening of Remedial Action Alternatives.

a. Development and Screening of Remedial Action Alternatives (4.2)

The Respondents shall begin to develop and evaluate, concurrent with the RI Site Characterization task, a range of appropriate waste management options that, at a minimum, ensure protection of human health and the environment and comply with all ARARs.

Refine and Document Remedial Action Objectives (4.2.1)

The Respondents shall review and, if necessary, propose refinement to the Site Objectives and preliminary remedial action objectives that were established during the Scoping phase (Task 1). Any revised Site Objectives or revised remedial action objectives shall be documented in a technical memorandum as discussed in Task 1b. These objectives shall specify the contaminants and media of interest, exposure pathways and receptors, and an acceptable contaminant level or range of levels (at particular locations for each exposure route).

Develop General Response Actions (4.2.2)

The Respondents shall develop general response actions for each medium of interest defining containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the remedial action objectives.

Identify Areas and Volumes of Media (4.2.3)

The Respondents shall identify areas and volumes of media to which general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The chemical and physical characterization of the Site and the Baseline Risk Assessment and remediation goals shall also be taken into account.

Identify, Screen, and Document Remedial Technologies (4.2.4; 4.2.5)

The Respondents shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented at the Site. General response actions shall be refined to specify remedial technology types. Technology process options for each of the technology types shall be identified either concurrent with the identification of technology types or following the screening of the considered technology types. Process options shall be evaluated on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative processes for each technology type. The technology types and process options shall be summarized for inclusion in a technical memorandum. The reasons for eliminating alternatives must be specified.

Assemble and Document Alternatives (4.2.6)

The Respondents shall assemble selected representative technologies into alternatives for each affected medium or operable unit. Together, all of the alternatives shall represent a range of treatment and containment combinations that shall address either the Site or the operable unit as a whole. A summary of the assembled alternatives and their related action-specific ARARs shall be prepared by the Respondents for inclusion in a technical

memorandum. The reasons for eliminating alternatives during the preliminary screening process must be specified.

Refine Alternatives

The Respondents shall refine the Remedial Action Alternatives to identify contaminant volumes to be addressed by the proposed process and sizing of critical unit operations as necessary. Sufficient information shall be collected for an adequate comparison of alternatives. Remedial action objectives for each medium shall also be refined as necessary to incorporate any new risk assessment information presented in EPA's Baseline Risk Assessment Report. Additionally, action-specific ARARs shall be updated as the Remedial Action Alternatives are refined.

Conduct and Document Screening Evaluation of Each Alternative (4.3)

The Respondents may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Note that the evaluation of effectiveness involves evaluating the long-term and short-term risks - among other factors - associated with a remedial alternative. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives shall be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis.

As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use treatment technologies and permanent solutions to the maximum extent practicable. The Respondents shall prepare a technical memorandum summarizing the results and reasoning employed in screening, arraying alternatives that remain after screening, and identifying the action-specific ARARs for the alternatives that remain after screening.

b. Alternatives Development and Screening Deliverables (4.5)

The Respondents shall prepare a technical memorandum summarizing the work performed and the results of each task above, including an alternatives array summary. This alternatives array shall be modified by the Respondents when conducting Task 8 if required by EPA's comments to assure identification of a complete and appropriate range of viable alternatives to be considered in the detailed analysis. This deliverable shall document the methods, rationale, and results of the alternatives screening process.

TASK 8 - DETAILED ANALYSIS OF REMEDIAL ACTION ALTERNATIVES (RI/FS Guidance, Chapter 6)

The detailed analysis shall be conducted by the Respondents to provide EPA with the information needed to allow for the selection of a remedy for the Site.

a. Detailed Analysis of Alternatives (6.2)

The Respondents shall conduct a detailed analysis of remaining alternatives. This analysis shall consist of an assessment of each option against a set of nine evaluation criteria and a comparative review of all options using the same nine evaluation criteria as a basis for comparison.

Apply Nine Criteria and Document Analysis (6.2.1 - 6.2.4)

The Respondents shall apply nine evaluation criteria to the assembled Remedial Action Alternatives to ensure that the selected Remedial Action Alternative will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) State acceptance; and (9) community acceptance. Criteria 8 and 9 are considered after the RI/FS Report has been released to the general public. For each alternative, the Respondents shall provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative; and (2) a discussion of the individual criterion assessment. Since the Respondents do not have direct input on criteria (8) State acceptance and (9) community acceptance, these two criteria will be addressed by EPA after completion of the Draft FS Report.

Compare Alternatives Against Each Other and Document the Comparison of Alternatives (6.2.5; 6.2.6)

The Respondents shall perform a comparative analysis among the Remedial Action Alternatives. That is, each alternative shall be compared against the others using the nine evaluation criteria as a basis of comparison. No alternative shall be identified by Respondents as the preferred alternative in the Feasibility Study. Identification and selection of the preferred alternative is conducted by EPA.

b. Detailed Analysis Deliverables (6.5)

The Respondents shall prepare a Draft FS Report for EPA review and comment. This report, as ultimately adopted or amended by EPA, provides a basis for remedy selection by EPA and documents the development and analysis of Remedial Action Alternatives. The Respondents shall refer to the RI/FS Guidance for an outline of the report format and the required report content. The Respondents shall prepare a Final FS Report which satisfactorily addresses EPA's comments. Once EPA's comments have been addressed by the Respondents to EPA's satisfaction and EPA approval has been obtained or an amendment has been furnished by EPA, the Final FS Report may be bound with the Final RI Report.

ATTACHMENT A
REFERENCES

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process:

1. The National Oil and Hazardous Substances Pollution Contingency Plan, (40 CFR Part 300), 59 FR 35852, September 15, 1994.

2. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final" U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01.

3. "Interim Guidance on Potentially Responsible Party Participation in Remedial Investigation and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, Appendix A to OSWER Directive No. 9355.3-01.

4. "Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, OSWER Directive No. 9835.3.

5. "A Compendium of Superfund Field Operations Methods," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.

6. "EPA NEIC Policies and Procedures Manual," May 1978, revised November 1984, EPA-330/9-78-001-R.

7. "Data Quality Objectives for Remedial Response Activities," U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.

8. "Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.

9. "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.

10. "Users Guide to the EPA Contract Laboratory Program," U.S. EPA, Sample Management Office, December 1986.

11. "Interim Guidance on Compliance with Applicable or Relevant and Appropriate Requirements," U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.

12. "CERCLA Compliance with Other Laws Manual," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (Draft), OSWER Directive No. 9234.1-01 and -02.

13. "Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites," U.S. EPA, Office of Emergency and Remedial Response, (Draft), OSWER Directive No. 9283.1-2.

14. "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents" U.S. EPA, Office of Emergency and Remedial Response, July 1999, OSWER Directive No. 9200.1-23.P.

15. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part A," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002A, December 1989, OSWER Directive No. 9285.7-01a.

16. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part B," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002B, OSWER Directive No. 9285.7-01b.

17. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part C," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002C, OSWER Directive No. 9285.7-01c.

18. "Interim Final Risk Assessment Guidance for Superfund - Volume II - Environmental Evaluation Manual," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/001, March 1989, OSWER Directive No. 9285.7-01.

19. "Superfund Exposure Assessment Manual," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-88/001, April 1988, OSWER Directive No. 9285.5-1.

20. "Guidance for Data Useability in Risk Assessment," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/G-90/008, October 1990, OSWER Directive No. 9285.7-05.

21. "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," April 22, 1991, OSWER Directive No. 9355.0-30.

22. "Health and Safety Requirements of Employees Employed in Field Activities," U.S. EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.

23. OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986).

24. "Interim Guidance on Administrative Records for Selection of CERCLA Response Actions," U.S. EPA, Office of Waste Programs Enforcement, March 1, 1989, OSWER Directive No. 9833.3A.

25. "Community Relations in Superfund: A Handbook," U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.0-3B.

26. "Community Relations During Enforcement Activities And Development of the Administrative Record," U.S. EPA, Office of Waste Programs Enforcement, November 1988, OSWER Directive No. 9836.0-1A.

27. "Environmental Investigations Standard Operating Procedures and Quality Assurance Manual", U.S. EPA Region IV, Science and Ecosystem Support Division, November 2001 (revised periodically).

28. "USEPA Contract Laboratory Program Statement of Work for Organics Analysis", U.S. EPA, Office of Emergency and Remedial Response, 1999.

29. "USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis", U.S. EPA, Office of Emergency and Remedial Response, 2001.

30. "Land Use in the CERCLA Remedy Selection Process," U.S. EPA, Office of Solid Waste and Emergency Response, OSWER Directive No. 9355.7-04, May 1995.

31. "Reuse Assessments: A Tool to Implement the Superfund Land Use Directive", U.S. EPA, Office of Solid Waste and Emergency Response, OSWER Directive No. 9355.7-06P, June 2001.

ATTACHMENT B
SUMMARY OF THE MAJOR DELIVERABLES FOR THE
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY AT
THE ORLANDO GASIFICATION SITE

TASK	DELIVERABLE	EPA RESPONSE
TASK 1	SCOPING	
	- RI/FS Work Plan (7)	Review and Approve
	- Field Sampling and Analysis Plan (5)	Review and Approve
	- Quality Assurance Project Plan (5)	Review and Approve
	- Site Health and Safety Plan (5)	Review and Comment
TASK 2	COMMUNITY RELATIONS	
	- Technical Assistance Plan (5)	Review and Approve
	- TAP Coordinator Qualifications (2)	Review and Approve
	- Outreach Coordinator Identification (1)	For Information Purposes
TASK 3	SITE CHARACTERIZATION	
	- Technical Memorandum on Contaminant Fate and Transport Modeling (where appropriate) (5)	Review and Approve
	- Preliminary Site Characterization Summary (5)	Review and Comment
	- Remedial Investigation (RI) Report (7)	Review and Approve

TASK 4	TREATABILITY STUDIES	
	- Technical Memorandum Identifying Candidate Technologies (5)	Review and Comment
	- Treatability Study Work Plan (or amendment to original Work Plan) (5)	Review and Approve
	- Treatability Study SAP (or amendment to original SAP) (5)	Review and Approve
	- Treatability Study Evaluation Report (5)	Review and Approve
TASK 5	HUMAN HEALTH AND ECOLOGICAL BASELINE RISK ASSESSMENTS	
	- Draft Human Health Baseline Risk Assessment (7)	Review and Approve
	- Final Human Health Baseline Risk Assessment (7)	Review and Approve
	- Draft Screening Assessment ERA Steps 1&2 (5)	Review and Approve
	- Final Screening Assessment ERA Steps 1&2 (5)	Review and Approve
	- Draft Problem Formulation ERA Step 3 (5)	Review and Approve
	- Final Problem Formulation ERA Step 3 (5)	Review and Approve
	- Draft Study Design ERA Step 4 (5)	Review and Approve
	- Final Study Design ERA Step 4 (5)	Review and Approve

	- Draft Risk Characterization ERA Step 7 (5)	Review and Approve
	- Final Risk Characterization ERA Step 7 (5)	Review and Approve
TASK 6	REUSE ASSESSMENT	
	- Draft Reuse Assessment (5)	Review and Comment
	- Final Reuse Assessment (5)	Review and Approve
TASK 7	DEVELOPMENT AND SCREENING OF REMEDIAL ACTION ALTERNATIVES	
	- Technical Memorandum Documenting Revised Remedial Action Objectives (5)	Review and Approve
	- Technical Memorandum on Remedial Technologies, Alternatives, and Screening (5)	Review and Comment
TASK 8	DETAILED ANALYSIS OF REMEDIAL ACTION ALTERNATIVES	
	- Draft Feasibility Study (FS) Report (7)	Review and Approve
	- Final Feasibility Study (FS) Report (7)	Review and Approve

Note: The number in parenthesis indicates the number of copies to be submitted by Respondents to EPA. One copy shall be unbound, the remainder shall be bound. Two additional copies shall be submitted to the State contact identified in the AOC. Also, see the Administrative Order on Consent for additional reporting requirements and further instructions on submittal and dispositions of deliverables.

ATTACHMENT C
GENERAL SCHEDULE FOR THE MAJOR
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY ACTIVITIES
AT THE ORLANDO GASIFICATION SITE

ACTIVITY	DUE DATE (DAYS)
Effective Date of AOC	X

Supervising Contractor Selected	X+15
Technical Assistance Plan	X+30
Draft RI/FS Work plan and Associated Documents	X+45
Draft Treatability Study Work Plan	X+45
Final RI/FS Work plan	X+120
Final Treatability Study Work Plan	X+120
Initiate Fieldwork	X+150
Fieldwork Complete	X+240
Preliminary Site Characterization Summary	X+300
Draft RI	X+340
Draft Baseline Risk Assessment	X+340
Final RI	X+400
Final Baseline Risk Assessment	X+400
Draft FS and Draft Treatability Study Report	X+460
Final FS and Final Treatability Study Report	X+520

Note: Other deliverables listed in Attachment B shall also be incorporated into the schedule to be submitted as part of the RI/FS Work Plan.