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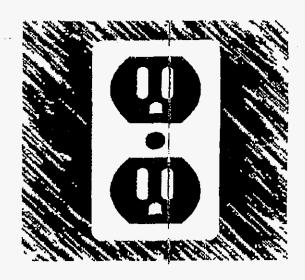
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REVIEW OF COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL PROCESSES OF THE FLORIDA ELECTRIC INDUSTRY

NOVEMBER 2011

THE FLORIDA PUBLIC SERVICE COMMISSION OFFICE OF AUDITING AND PERFORMANCE ANALYSIS

- DOCUMENT NUMBER -DATE

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REVIEW OF COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL PROCESSES OF THE FLORIDA ELECTRIC INDUSTRY

VICTOR GORDIANO ENGINEERING SPECIALIST II PROJECT MANAGER

NOVEMBER 2011

BY AUTHORITY OF
THE STATE OF FLORIDA
PUBLIC SERVICE COMMISSION
OFFICE OF AUDITING AND PERFORMANCE ANALYSIS

PA-10-10-004

DRAFT 10/28/11 CONFIDENTIAL

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1.0 EXECUTIVE SUMMARY

1 1 SCOPE AND DBJECTIVES

This review examines how the four major investor-owned electric utilities (IOUs) in Florida are handling coal combustion residual (CCR) storage and disposal. It also addresses how each company is reassessing its practices based on proposed regulations by the U.S. Environmental Protection Agency (EPA). This review was conducted on behalf of the Florida Public Service Commission (FPSC) by the Performance Analysis Section of the Office of Auditing and Performance Analysis. The companies audited included: Tampa Electric Company (TECO), Progress Energy Florida, Inc. (PEF), Gulf Power Company (Gulf), and Florida Power & Light Company (FPL). Specifically, FPSC audit staff focused on the following areas:

- CCR Management
- ◆ Risk Assessment
- ◆ Performance Self-Evaluation

12 BACKGROUND AND PERSPECTIVE

Nearly half of the nation's electricity comes from coal-fired generation plants.\(^1\) Future reliance on coal generation may decline sharply as fewer coal plants are being built due to environmental concerns. In Florida, approximately 36 percent of the electricity was generated from coal in 2000. In 2010, 25 percent of Florida's electric generation was from coal and it is forecasted to remain near 25 percent by 2020.\(^2\)

Coal combustion for electric generation produces four main types of large volume CCRs:

- Fly ash Fine particles of silica glass that are removed from the plant exhaust gases by air emission control devices.
- ◆ Bottom ash Ash particles that are too large to be carried in the flue gases and collect on the furnace walls or fall through open grates to an ash hopper.
- ♦ Boiler slag Molten bottom ash collected at the base of slag tap and cyclone type furnaces that is quenched with water. It is made up of hard, black, angular particles that have a smooth, glassy appearance.
- Flue gas desulfurization materials (e.g., gypsum) Sludge or powdered sulfate and sulfite produced through a process used to reduce sulfur dioxide (SO₂) emissions from the exhaust gas system of a coal-fired boiler.

Of the 136 million tons of CCRs generated nationwide in 2008 by roughly 495 coal-fired power plants, approximately 34 percent were disposed in landfills, 22 percent in surface

EXECUTIVE SUMMARY

¹U.S. Energy Information Administration (p.1) at http://www.eis.gov/cneaf/electricity/epa/figes1.html FRCC's 2011 Load & Resource Plan, pp. S-17 to S-19, at http://www.psc.state.fi.us/utilities/electricqae/docs/FRCC_2011_Load_Resource_Plan.pdf.

impoundments,³ and 8 percent in mines. The remaining 37 percent were recycled as in concrete, gypsum wallboard, or other beneficial uses.

The Florida power plants subject to this review generated approximately 3 million tons of CCRs in 2010, with about 20 percent stored or disposed in landfills, 3 percent in surface impoundments, 5 percent in other storage facilities, and 71 percent beneficially used. In 2010, the combined Florida cost for disposal totaled about \$1.3 million. Sales revenue for the residual was over \$3.4 million. In Florida, CCR storage and disposal and beneficial recycling are regulated by the Florida Department of Environmental Protection (FDEP). The FPSC also has regulatory authority pursuant to Chapter 366, Florida Statutes, over electric utility operations, safety, and rates which could be impacted by the increased regulatory costs; associated with the EFA's proposed rules. As required by existing rules and statutes, power plants in Florida are permitted or licensed, and are required to monitor groundwater impacts from ash storage areas or settling ponds by one of the following ways:

- National Pollutant Discharge Elimination System permit and groundwater permit
- Separate groundwater permit
- Solid waste permit
- ◆ Conditions of certification under the Florida Power Plant Siting Act

2008 TVA KINGSTON SPILL

Due in large part to the environmental impact of the CCR spill at the Tennessee Valley Authority's (TVA's) Kingston facility in 2008, the EPA has proposed rules to regulate CCRs as hazardous wastes. Future regulation of CCRs could restrict disposal in liquid form and require additional liners or capping of existing CCR pends.

Following the TVA ash spill in 2008, the EPA requested detailed information from coal-fired electric utility plants to identify and assess the structural integrity of their CCR surface impoundments, dams, or other management units. Staff reviewed the responses to the EPA's requests and notes that none of Florida's coal-fired electric utility plants are on the "high hazard potential" ratings list. Hazard potential ratings are generally assigned by state dam safety officials.

EPA's April 2010 regulatory impact analysis contains a list identifying the electric utility plants that have reported historical contamination release events, involving CCR surface impoundments, within the years 1999 to 2008. None of Florida's coal-fired plectric utility plants are on this list.

The EPA's risk assessment analysis concluded that absent proper disposal contaminants from CCRs leak into groundwater. On June 21, 2010, the EPA proposed rules that would regulate CCR disposal by electric utilities. The EPA also requested and reviewed comments on whether certain forms of beneficial uses should be regulated, such as the use of CCRs in embankment fill and some agricultural applications. At this time, the EPA is not proposing to regulate beneficial uses of CCRs on a federal level.

EPA PROPOSED REGULATIONS

The EPA has proposed two regulatory schemes to regulate CCRs. In the Resource Conservation and Recovery Act under Subtitle C, CCRs are classified as "special waste", and

EXECUTIVE SUMMARY

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Surface impoundments are natural topographic depressions, man-made excavations, or diked areas formed primarily of earthen materials (although may be lined with man-made materials), which are designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which are not injection wells. Examples of surface impoundments are holding storage, settling, and a seration pits, ponds, and lagoons.

classified as "non-hazardous waste" under Subtitle D. Both schemes require liners and groundwater monitoring on new landfills receiving CCRs. The primary differences in the two plans involve the interim management of CCRs prior to disposal, treatment of existing disposal facilities, as well as implementation and enforcement.

Subtitle C regulates CCRs as hazardous waste. It includes measures intended to result in a phase out of existing surface impoundment facilities for the wet storage of CCRs. This approach also creates a comprehensive program of requirements for wasterdisposal that would be directly enforceable by the federal government through state or federal permit programs. Due to Florida's statutory prohibition of hazardous waste landfills, the disposal and beneficial use of CCRs in Florida would be prohibited. Absent legislative amendment, CCRs will have to be transported out-of-state for disposal or for beneficial use. States would be required to adopt the rule before it would become effective. The EPA expects that rule adoption by the states could take several years.

Under Subtitle D, the EPA would set performance standards for CCR disposal and would require liners on existing impoundments where CCRs are stored in wet form. The EPA expects this would induce utilities to close existing impoundments and increase the disposal of CCRs in dry form. This approach would go into effect perhaps as early as six months after promulgation of the rules because it would not require state or federal permit programs. The rules would not be federally enforceable, but would be primarily enforced through citizen litigation.

The EPA prepared a Regulatory Impact Analysis to estimate the costs and benefits of the two regulatory approaches under various scenarios. The EPA estimates nationwide annualized costs of \$1.5 billion for the first approach and \$0.6 billion under the second approach. The EPA's cost estimates include industry compliance costs, as well as state and federal monitoring and enforcement costs. The EPA contends that the rules will have "widespread environmental and economic benefits," including: benefits associated with groundwater protection, prevention of future ash spills, and encouragement of recycling into beneficial uses. There has been disagreement whether the EPA's proposed rules will increase or decrease beneficial uses for CCRs.

The EPA's annualized benefit estimate under Subtitle C is \$7.4 billion based on induced future annual increases in beneficial use. However, potential decreases in beneficial use could reduce potential benefits by \$0.1 billion to \$3.0 billion per year nationwide.

Gulf, for example, states that its costs necessary to comply with the Subtitle C and D regulations might result in an estimated annual revenue requirement between \$186 million to \$286 million and \$102 million to \$172 million to Gulf's retail customers, respectively. The company emphasizes that the costs and resulting revenue requirements to Gulf's retail customers are high-level estimates and include a significant amount of uncertainty.

The EPA released its proposed rules on June 21, 2010. The public comment period ended on November 19, 2010. The final rules are anticipated in 2012. The timing of compliance would depend on the rule option adopted, with full compliance expected by 2018. Both rules provide a five-year window for utilities to install required liners on existing CCR surface impoundments. Appendix A contains a summary of the EPA's proposed rules and Appendix B lists the key differences between the rule options.

EXECUTIVE SUMMARY

^eEPA's August 20, 2010 Proposed Rule Update at http://www.regulations.gov/#idocumentDetail:D=EPA-HQ-RCRA-2008-0640-2660.

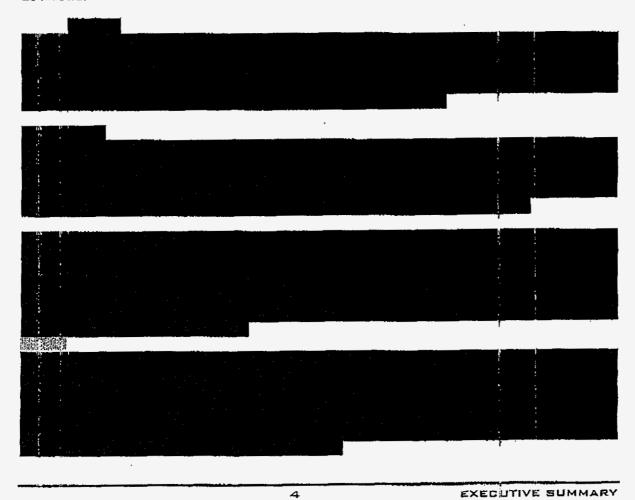
13 FINDINGS AND CONCLUSIONS

WHAT ARE AUDIT STAFF'S FINDINGS AND CUNCLUSIONS?

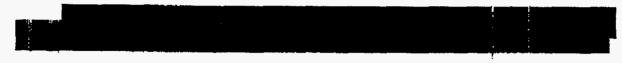
Each of the four IOUs are proactively managing CCR storage and disposal activities. All four IOUs are taking steps to market CCRs for beneficial use with varying degrees of success, and each employ management oversight of storage and disposal operations. The company self-assessment information reflected in **Exhibits 2 and 3** appears to indicate general compliance with applicable federal, state and local regulations pertaining to CCR storage and disposal.

In addition, audit staff believes each company is assessing the potential operational changes and impacts of the proposed EPA regulations. The companies state that they continue to monitor the proceeding and will conduct a more thorough cost analysis once the EPA issues its final rules.

Audit staff's findings specific to each of the company's CCR management processes are as follows:



8



GULE

Audit staff raised some concerns regarding Gulf's procedures in place to handle potential emergency events at its CCR management facilities. To alleviate such concerns, the company states that it has implemented issuing cards with emergency contact information and posting the information in control rooms and other locations around the plants as designated by the plant managers. Audit staff also recognizes Gulf's initiation of stockpiling gravel, riprap (broken stones or concrete), and soil at its CCR surface impoundments for emergency dike repair purposes.

Audit staff found that in 2010 Gulf marketed 41 percent of its CCR production. Net revenues from marketing the CCRs were the control of the comprised of the control of the

Additionally, audit staff notes that Gulf's inspectors at Plant Crist should complete each page of the inspection form, as formatted, including the inspection date and time. This process would not only satisfy the company's own procedures but also facilitate post-inspection data analysis, inspection performance reviews, and accurate recordkeeping of all the data contained in the eight-page inspection form.



CONCLUSIONS

Approximately three million tons of CCRs are generated per year by the Florida IOUs subject to this review. In 2010, the combined cost of CCR storage and disposal totaled about \$1.3 million, while CCR sales revenue was over \$3.4 million. The percent of CCRs marketed for beneficial use varied among the IOUs, from a low of 41 percent to a high of 86 percent.

Audit staff notes that the IOUs each have their own unique CCR production, storage and disposal issues. The utilities should continue to review their operations, identify areas for improvement, and make changes to their CCR storage and disposal processes that may be necessary. All companies are encouraged to either continue or increase their marketing of CCRs for beneficial use.

EXECUTIVE BUMMARY

ABCDE

2.0 OVERVIEW OF OPERATIONAL COMPLIANCE

Z 1 DESERVATIONS

HOW MUCH OF THE COAL COMBUSTION RESIDUALS ARE PRODUCED, MARKETED, STORED OR DISPOSED BY THE FLORIDA IDUS, AND WHAT ARE THE ASSOCIATED COSTS AND REVENUES?

Combined, the Florida utilities produced approximately three million tons of CCRs in 2010. Over 71 percent of the residuals produced were marketed for beneficial use with the remainder stored or disposed. In 2010, the combined Florida cost for storage and disposal totaled about \$1.3 million. Sales revenue for the residuals was over \$3.4 million. Exhibit 1 shows a summary of the amounts of CCRs produced, marketed, stored on disposed, and the associated costs and revenues in 2010 for each company.

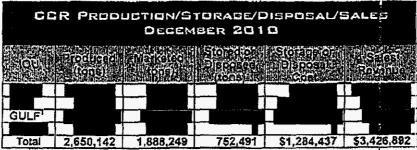
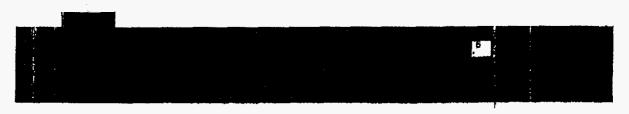


EXHIBIT I Source: Supplemental Document Request 2.7(2),(b) Includes Guif's ownership portion of Plant Daniel (in Mississippl).

²Gulf states CCRs produced do not equal the sum of marketed, stored and disposed due to inherent imprecision in estimating astroontent of varying coals.

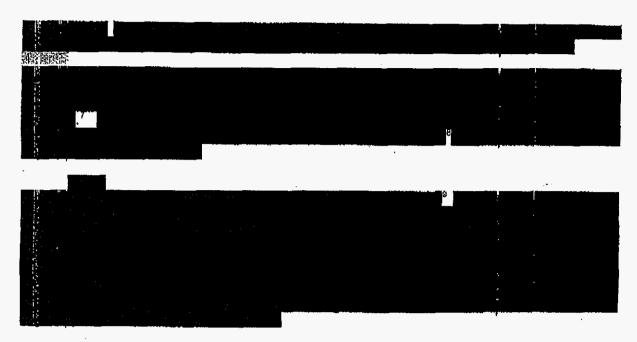
WHAT IS THE STATUS OF THE UTILITY'S COMPLIANCE WITH THE CURRENT COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL REQUIREMENTS?

Exhibits 2 and 3 below reflect each IOU's self-assessment of the status of compliance with the current requirements for the disposal of CCRs in Florida. Exhibit 3 identifies the self-assessments for surface impoundments, and Exhibit 3 identifies the self-assessments for landfills.



*EPA's April 2010 RIA at http://rffilibrary.files.wordpress.com/2010/05/epa-hq-rcra-2009-0640-0003.pdf; provides a summary of baseline state government requirements for both landfills and surface impoundments. See http://rffilibrary.files.wordpress.com/2010/05/epa-hq-rcra-2009-0640-0003.pdf; provides a summary of baseline state government requirements. See

OVERVIEW OF OPERATIONAL



GULF

Gulf has four CCR surface impoundments in Florida. Two of which are at Plant Crist, one at Plant Smith, and one at Plant Sholtz. Gulf states that all four are in compliance with all relevant and applicable federal and state laws and rules pertaining to CCR management. It also states that the liner, leachate collection system, financial assurance, and daily cover requirements are determined on a case-by-case basis pursuant to the FDEP Rule 62-701.220, F.A.C.

Exhibit 2 shows that Gulf passed groundwater monitoring at three of the four surface impoundments. The fourth impoundment is at Plant Crist and began operations in 1959. According to Gulf groundwater monitoring is not applicable for this impoundment. Gulf stated that due to the location of that surface impoundment, and topography, groundwater monitoring would not be possible and would not provide representative data due to the influence of the adjacent surface water. Gulf discussed the site factors with FDEP and it was decided that surface water monitoring for this surface impoundment would be adequate. This sampling method was agreed to and then required in Gulf's NPDES permit.

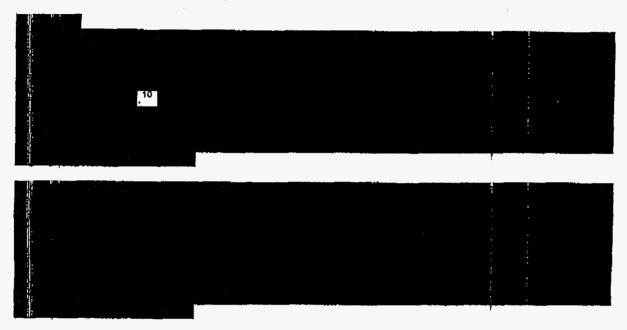
Gulf indicates in Exhibit 2 that it does not have liners, leachate collection systems, caps, financial assurances, daily covers, dust controls, run-on/run-off controls, and post-closure monitoring controls for the three older surface impoundments. The company states these controls are not required for these impoundments. The 2009 surface impoundment at Plant Crist, however, does require some of these controls. Specifically, the liner, leachate, and run-on/run-off controls are required. The company states it complies with each of these requirements for the 2009 surface impoundment at Plant Crist. Gulf states that the cap,

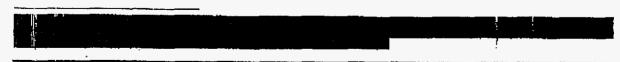


OVERVIEW OF OPERATIONAL

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financial assurance, daily cover, dust controls, and post-closure monitoring controls are not applicable to the 2009 surface impoundment.





OVERVIEW OF OPERATIONAL COMPLIANCE

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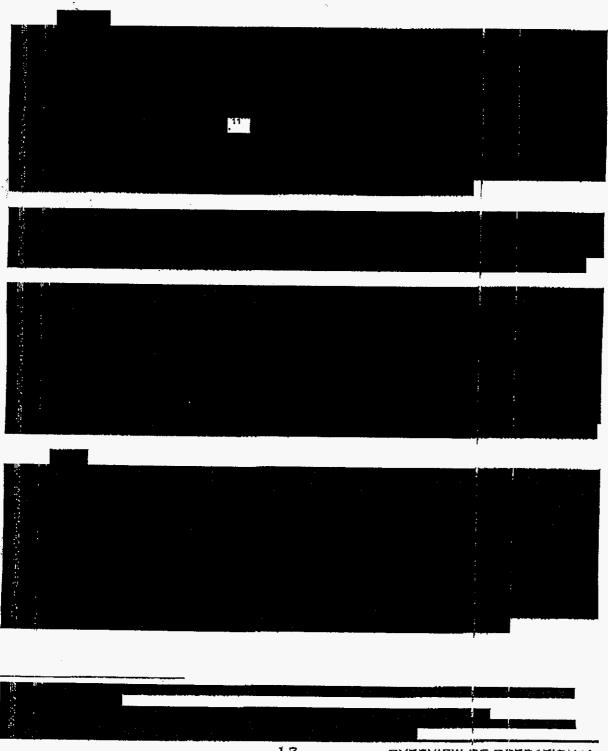
EXHIBIT 2

Source: Company Responses to Supplemental DR2

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Source: Company Responses to Supplemental DR2

WHAT PREVENTATIVE MEASURES HAVE BEEN TAKEN BY FLORIDA UTILITIES TO MITIGATE RISK OF HARM TO THE PUBLIC HEALTH AND ENVIRONMENT?



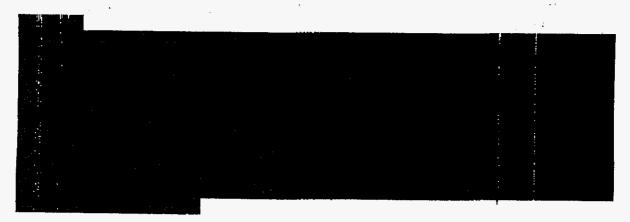
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OVERVIEW OF OPERATIONAL COMPLIANCE

GULF

Gulf states that none of its CCR management facilities are closed-cycle, zero-discharge systems. Gulf Power notes that it is unaware of any federal law, state law or rule that requires implementation of closed-cycle, zero discharge systems.

Plant Crist operates a flue gas desulfurization (FGD) system. The operating areas of the FGD system at Plant Crist have concrete or geosysthetic liners in place to prevent stormwater from coming into contact with the gypsum and potentially impacting groundwater. The stormwater from these areas is conveyed to the existing FGD gypsum pond and storage area and then routed to another pond to be reused in the scrubber system. The only discharge from the FGD system is to a permitted Underground Injection Control (UIC) well that was approved by FDEP on February 12, 2009. Approximately 85 to 95 percent of the FGD system wastewater is recycled for reuse in the system itself. The remaining wastewater discharges from the FGD system (scrubber blow down and vacuum extraction water from the processing system) are conveyed into the lined pond system where gypsum settles and the remaining water is further conveyed to the return water pond. From that point, the water is routed for reuse in the FGD system. Only a small portion of the FGD system wastewater is removed and injected into the FDEP permitted UIC well for control of chloride concentrations to facilitate FGD system the wastewater reuse.



GOAL COMBUSTION RESIDUAL MANAGEMENT

HOW MUCH AND WHAT TYPES OF COAL COMBUSTION RESIDUALS ARE PRODUCED, MARKETED, STORED OR DISPOSED BY THE UTILITY, AND WHAT ARE THE ASSOCIATED COSTS AND REVENUES?

Gulf has eight coal-fired electric power generation units in Florida with a combined capacity of 1,355 MW: Plant Crist Units 4 through 7 (906 MW), Plant Smith Units 1 and 2 (357 MVV), and Plant Scholz Units 1 and 2 (92 MW). The amounts, by type, of CCRs produced, marketed, stored or disposed for 2008 through 2010 are shown in Exhibit 10, including the associated storage or disposal costs and sales revenues. In 2010, Gulf marketed 41 percent of CCR production, with the majority of the sales revenue derived from Guif's cwnership portion of Plant Daniel in Mississippi.

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Coal ash figures represent both fly ash and bottom ash produced. Plant Crist is the only! Gulf facility that

generates FGD gypsum.

Gulf states that it does not dispose CCRs but stores them in its surface impoundments and landfills until sold for

*Guif states GCRs produced do not equal the sum of marketed, stored and disposed due to inherent imprecision in estimating ash content of varying coals.

**Gypsum; all other entries in this column represent both fly ash and bottom ash.

Figures presented for Plant Daniel (in Mississippl) only represent Gulf Power's ownership portion.

*CCR landfill cap operation and maintenance costs.

CCR surface impoundment operation and maintenance costs.

The cost to develop markets with vendors for off-site beneficial use of gypsum in 2010 exceeded the revenue on gypsum sold. The primary cost was transportation, along with providing some gypsum at no cost po prospective vandors could test gypsum for use in their processes.

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EXHIBIT 10

Source: Supplemental Document Request 2.7(a)(b)

GULF POWER COMPANY

PAGE 18/23

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62:20 11/55/5011 WHAT ARE THE UTILITY'S COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL ACTIVITIES AND PROGRAMS?

All of Gulf's CCR storage areas are subject to permits issued by state agencies such as FDEP. Some of those permits require certifications on specific plant ash storage facilities on an annual basis. Gulf personnel conducts weekly inspections of the ash storage facilities. Additionally, Southern Company Services conducts an annual safety inspection and provides an assessment of Gulf's ash storage facilities. Gulf believes the inspections and assessments comply with best practices within the industry to ensure ash storage facilities meet all applicable local, state, federal regulations and industry standards. Specific plant activities and programs are described below.

PLANT CRIST

Fly ash is transported dry via a vacuum and pressure system to two silos. Once in the silos, the ash is either loaded into enclosed trucks for off-site beneficial use by concrete or cement companies or loaded into trucks and taken to the on-site ash landfill for storage. The bottom ash is transported via water to a hydrobin which is designed to remove the water from solid materials in slurry form. The hydrobin is drained each week and the bottom ash is transported by truck to the on-site ash landfill. The ash landfill is divided into cells. Once a cell is full, it is capped with topsoil and grass.

PLANT SMITH

CCRs at Plant Smith are transported by a wet sluicing system to the ash pond where the ash is stored. Periodically, ash is removed from the pond to meet appropriate water detention volume levels. The excavated ash is transported and placed into the on-site ash landfill for storage. As at Plant Crist, the ash landfill is divided into cells which are capped with topsoil and grass when full.

PLANT SCHOLZ

CCRs are transported by a wet sluicing system to the ash pond for storage. Periodically, CCRs are removed and stacked on internal dikes within the ash pond to maintain appropriate and safe volume levels.

PLANT DANIEL (IN MISSISSIPPI)

Fly ash is collected by a dry ash handling system and transferred to silos. The ash is then hauled to the on-site landfill or sold for beneficial use by concrete or cement companies. Similar to the operations at Plant Scholz, the bottom ash is transferred by a wet sluicing system to the ash pond for storage. The bottom ash is periodically removed from the pond to maintain appropriate and safe volume levels and hauled to the on-site landfill where it is either sold for off-site beneficial use by concrete or cement companies or stored.

WHAT DOES THE UTILITY DO TO MARKET COAL COMBUSTION RESIDUALS FOR SENEFICIAL USE?

According to Gulf's reported di	ata as reflected in Exhibit 10, approximately 41 percent of
its CCRs were marketed for beneficial	use in 2010. Net revenues from marketing the CCR were
This total is comprised of	in revenue from Plant Daniel in Mississippi but a
marketing cost at Plant Crist of	
Audit staff encourages to	Juil to become more proactive in marketing the CCRs

GULF FOWER COMPANY

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produced by its three plants in Florida. At some point, Gulf may want to consider the use of a competitive bidding process.

The company has existing contracts with end users that beneficially use CCRs for various purposes including wallboard, cement manufacturing, and agricultural uses. New CCR beneficial use markets are continually being explored by Gulf Power and the CCR marketers with which it contracts.

5.2 RISK MANAGEMENT

DOES THE UTILITY EMPLOY ADEQUATE MANAGEMENT CIVERSIGHT AND APPROPRIATE CONTROLS FOR ITS COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL OPERATIONS?

Gulf uses Southern Company Services technical staff to monitor the existing CCR storage processes by physical inspection of the facilities. Specifically, the company states that Gulf personnel conducts weekly inspections and Southern Company Services technical staff conducts an annual safety inspection and assessments of each ash impoundment at Gulf's coal-fired power plants.

According to the company, personnel at all of Gulf's plants, are to adhere to the Dam and Dike Inspection Guidelines for the water retaining structures on the property. The guidelines include specific plant responsibilities, such as weekly and monthly visual inspections by the Chemical and Results personnel and Compliance personnel, respectively. Any areas of concern are to be immediately reported to SCG Hydro Services. Also, all completed inspection checklists are to be promptly forwarded to the compliance group for review, routing, and filing. Additional inspections are to be conducted by either plant personnel or a dam safety engineer any time an unusual circumstance occurs: severe rain event, post-storm (hurricane, tornado, etc.), high river or stream flow, unusually high tide, or an earthquake. The results of such inspections are to be immediately reported to SCG Hydro Services for further review and corrective action.

Gulf also operates under various permits, such as the National Follutant Discharge Elimination System permit, that contain specific inspection requirements concerning wastewater discharge and annual certification of impoundment integrity. Several of the permits require Gulf to certify annually that the ash ponds provide the necessary minimum wet weather detention volume to contain the combined volume for rainfall from a 10-year, 24-hour rainfall event and the maximum industrial wastewater flows which could occur during a 24-hour period.

HAS THE UTILITY PARTICIPATED IN THE EPA'S RULEMAKING OR ANY OTHER RELATED PROCEEDING CONCERNING COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL?

Gulf provided comments on EPA's proposed CCR rulemaking during EPA's public comment period that ended on November 19, 2010. Gulf submitted comments as an operating company of Southern Company and as a member of the Florida Electric Rower Coordinating Group, Inc.

Southern Company, as Gulf's parent corporation, also submitted comments to the EPA and stated that adoption of either the Subtitle C or D options could require closure of, or

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GULF POWER COMPANY

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significant change to, existing storage units. Construction of lined landfills, as well as additional waste management and groundwater monitoring may be necessary. Southern Company also stated that under both options, the EPA proposes to exempt the beneficial use of coal combustion byproducts from regulation; however, a hazardous or other designation indicative of heightened risk could limit or eliminate beneficial reuse options. Although its analysis is preliminary, Southern Company believes the EPA has significantly underestimated compliance costs in the proposed rule.

Southern Company stated in its comments that federal oversight is not necessary because its facilities are designed, constructed, and operated according to the best industry practices to ensure CCR management and disposal are safe and effective. However, should the EPA promulgate final regulations, Southern Company urged the EPA to take an approach that recognizes the operational realities of the existing energy delivery structure.

Southern Company further stated that any federal standards or regulations should recognize that CCRs are non-hazardous "solid waste" for purposes of the Resource Conservation and Recovery Act. Gulf believes existing CCR management facilities should be allowed to continue operating and that primary responsibility for CCR regulation should reside with the states, pursuant to the direction provided by Congress under Respurce Conservation and Recovery Act Subtitle D. Among the options proposed or discussed by the EPA, Gulf states that Subtitle D-prime is the best approach, subject to the number of additional suggestions proposed by Gulf.

Southern Company stated that the impact of these proposed regulations will depend on their final form and the outcome of any legal challenges. The changes could result in significant additional compliance, operational costs that could affect future unit retirement, replacement decisions, results of operations, cash flows, and financial condition. Also, it noted that higher costs recovered through regulated rates would result in higher rates for customers and could contribute to reduced demand for electricity which could negatively impact results of operations, cash flows, and financial condition.

5.3 PERFORMANCE SELF-EVALUATION

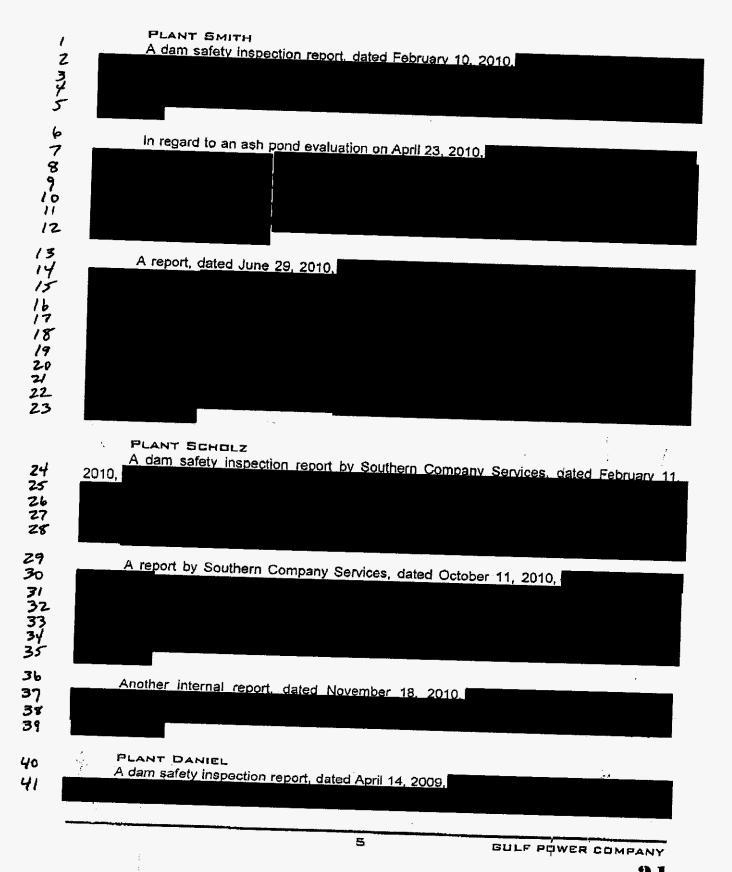
HAS THE UTILITY CONDUCTED ANY STUDIES OR ANALYSES ON ITS COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL MANAGEMENT PROCESSES?

Annual CCR storage and disposal management reports from Southern Company Services' inspectors conveyed the following over the period 2009 through 2010:

PLANT CRIST

The dam safety inspection reports, dated April 9 and December 10, 2010

GULF POWER COMPANY



Another internal dam safety inspection report, dated May 19, 2010,

DOES THE UTILITY HAVE PROCESS IMPROVEMENT ACTIVITIES IN PLACE FOR ITS COAL COMBUSTION RESIDUAL STORAGE AND DISPOSAL MANAGEMENT PROCESSES (LESSONS LEARNED, PEER REVIEWS, ETC.)?

Gulf states its weekly inspections, annual safety inspections and assessments of its ash ponds by qualified personnel provide the necessary assurance that the facilities will safely retain the CCRs. Gulf has implemented the following procedures and practices to ensure continued safe CCR operations:

- ◆ Emergency response numbers and personnel available twenty-four hours a day, seven days a week if necessary;
- Plant personnel who conduct ash pond inspections are trained by dam safety engineers annually;
- Vegetation on dikes/berms of ash ponds is controlled;
- ◆ Any new structures, modifications to existing structures, or changes in maintained sluiced CCR levels must be reviewed and approved by professional engineers at Southern Company Services prior to and during design and construction.

Additionally, Gulf has initiated the stockpiling of gravel and soil at all ash pond locations in the event that corrective actions might be required. Gulf further notes that it strives to improve its best management practices through continual employee education on new industry standards and process improvements.

Gulf Power Company Responses to Florida Public Service Commission Office of Auditing and Performance Analysis Review of Coal Ash Storage and Disposal Processes

DOCUMENT REQUEST 1

1. Please identify personnel primarily responsible for dealing with issues associated with the company's coal ash storage and disposal.

RESPONSE: James O. Vick, Director of Environmental Affairs, Gulf Power Company ("Gulf Power").

2. Please provide copies of all company policies and procedures in place to facilitate proper coal ash storage and disposal.

RESPONSE: The Southern Company Safety Procedure for Dams and Dikes is provided as Attachment A. The Crist Electric Generating Plant National Pollutant Discharge Elimination System ("NPDES") permit, the Lansing Smith Electric Generating Plant NPDES permit, the Scholz Electric Generating Plant NPDES permit, and the Daniel Electric Generating Plant Solid Waste Management permit are provided in Attachment B and include specific permit conditions addressing coal ash management.

Gulf Power's coal ash storage and disposal management policies and procedures are found in the documents listed below which are included in Attachment C.

Plant Crist - Fly Ash Disposal and Technical Specifications (2010)

Dam and Dike Inspection Guidelines (2009)

Certificate of Completion of Construction and Operational Plan (1981)

Plant Smith - Ash Pond Maintenance Plan (2010)
Landfill Construction Permit (1988)
Dry Fly Ash Disposal Area Revised Scope and Plan (1985)

Plant Daniel - Technical Specification for Ash Stacking at the North Ash Management Unit- Cell I at Plant Daniel Mississippi Power Company (1-13-10)

3. Please describe the company's goals and objectives relevant to its coal ash storage and disposal programs, and explain how the company works to achieve them.

RESPONSE: Gulf Power's goals and objectives include properly managing coal ash generated from its electric generating units such that the coal ash stored in ash ponds and landfills remains in designated areas so as to protect human health, safety, and the environment. To maintain appropriate and safe volume levels, some of the ash in the ash ponds at Plants Smith, and Daniel is periodically removed and placed into the on-site ash

landfills. At Plant Scholz, excavated ash from the ash pond is stacked on internal dikes within the ash pond to maintain appropriate and safe volume levels.

At Plant Crist and Plant Daniel, the goals and objectives include reducing the amount of coal ash in the on-site landfills by maximizing the potential beneficial use of coal ash when beneficial use markets are available. To achieve these goals and objectives, Gulf Power continually markets coal ash to concrete and cement companies for their use as raw feed material. This coal ash needs to meet certain parameters to be beneficially used by the concrete and cement companies. Ash that cannot be beneficially used is stored in the on-site coal ash landfills at these plants.

4. Please describe the company's type of disposal facilities and the capacity of each.

RESPONSE: Coal ash is stored at each of the Gulf Power facilities described below.

1 2	Plant Crist Ash Pond - Plant Crist Ash Landfill -	Area: 16 acres Estimated remaining capacity Area: 68 acres Estimated remaining capacity cy as of 2009 cy as of 2009
3	Plant Smith Ash Pond -	Area: 172.2 acres
	B1 . B / L	Estimated remaining capacity cy as of 2009
4	Plant Smith Ash Landfill-	Area: 72 acres
		Estimated remaining capacity cy as of 2009
	Plant Scholz Ash Pond -	Area: 31.8 acres
5		Estimated remaining capacity cy as of 2009
,	Plant Daniel Ash Pond -	Area: 18.7 acres
6	***	Estimated remaining capacity cy as of 2009
7	Plant Daniel Ash Landfill -	Area: 30 acres
•		Estimated remaining capacity cy as of 2009

5. Please describe the company's current coal ash storage and disposal programs.

RESPONSE: At Plant Crist, fly ash is transported dry via a vacuum/pressure system to two silos. Once in the silos, the ash is either loaded into enclosed trucks for off-site beneficial use by concrete or cement companies or loaded into trucks and taken to the on-site ash landfill for storage/disposal. The bottom ash is transported via water to a hydrobin. The hydrobin is drained each week and the bottom ash is transported by truck to the on-site ash landfill. The ash landfill is divided into cells. Once a cell is full it is capped with top soil and grass.

Coal ash at Plant Smith is transported by a wet sluicing system to the ash pond where the ash is stored. Periodically, it becomes necessary to remove some of the ash from the pond to meet appropriate water detention volume levels. The excavated ash is

transported and placed into the on-site ash landfill for storage/disposal. The ash landfill is divided into cells. Once a cell is full, it is capped with top soil and grass.

At Plant Scholz, coal ash is transported by a wet sluicing system to the ash pond for storage/disposal. Periodically, coal ash is removed from the pond and stacked on internal dikes within the ash pond to maintain appropriate and safe volume levels.

At Plant Daniel, fly ash is collected by a dry ash handling system and transferred to silos. The ash is then hauled to the landfill or sold for off-site beneficial use by concrete or cement companies. Bottom ash is transferred by a wet sluicing system to the ash pond for storage/disposal. The bottom ash is periodically removed from the pond to maintain appropriate and safe volume levels and hauled to the on-site landfill, where it is either sold for off-site beneficial use by concrete or cement companies or stored permanently.

6. Please explain the company's risk assessment of coal ash storage and disposal.

RESPONSE: Gulf Power utilizes the expertise of a technical group within Southern Company called Southern Company Services to conduct an annual safety inspection/assessment of each ash impoundment at Gulf Power's coal-fired power plants. In addition to the annual inspections, plant personnel conduct weekly inspections of the ash ponds.

Some of the permits provided in Attachment B include annual impoundment integrity inspection requirements. Several of the permits require Gulf Power to annually certify that the ash ponds provide the necessary minimum wet weather detention volume to contain the combined volume for rainfall from the 10-year, 24-hour rainfall event and the maximum industrial wastewater flows which could occur during a 24-hour period.

7. a. Please describe how the company monitors its existing coal ash storage and disposal program processes and practices.

RESPONSE: Gulf Power monitors the existing coal ash storage and disposal processes by physical inspection of the facilities. Physical inspections/assessments are conducted annually by Southern Company Services technical staff. Plant personnel also conduct weekly inspections of the ash ponds and complete an inspection form which is kept onsite at each facility. Any problems noted are reported to the plant's compliance group and investigated, corrected, and monitored to completion.

b. Please describe any information collected or report produced during the monitoring process.

RESPONSE: Weekly and annual written reports of the physical inspections/assessments conducted on ash ponds at Gulf Power facilities are kept on-site at each respective facility.

8. a. Please describe whether and how the company ensures that it gets early detection of coal ash storage and disposal problems.

RESPONSE: The weekly and annual inspections/assessments discussed in response to question 6 are intended to provide for early detection of potential issues.

b. Please describe how the company defines "early detection" in its context.

RESPONSE: Gulf Power defines "early detection" as physical survey signs such as an increase in seepage from a cell and possible movement of soils. Preventative steps are taken to ensure that erosion and other unsafe conditions do not occur at the ash pond and landfill facilities.

c. Please describe the steps the company takes to ensure that it properly corrects and documents all early-detection coal ash storage and disposal problems or potential situations.

RESPONSE: As stated above, Gulf Power conducts inspections of its ash ponds on a weekly basis utilizing qualified plant personnel. In addition, an annual safety inspection/assessment of Gulf Power ash ponds is conducted by qualified Southern Company Services personnel. All inspection/assessment recommendations are appropriately addressed by plant management in a timely manner.

9. Please describe how the company monitors, evaluates, and certifies that the company is complying with all applicable local, state, and federal regulations, including company and industry standards for proper coal ash storage disposal.

RESPONSE: All of Gulf Power's ash storage areas are subject to permits issued by state agencies. Some of those permits require certifications on specific plant ash storage facilities on an annual basis. The use of specialized personnel within Southern Company Services to conduct annual safety inspections/assessments of Gulf Power ash ponds described in the response to question 6 provides Gulf Power with access to the best practices within the industry for ash storage facilities and enables Gulf Power's management to ensure that its ash storage facilities fully meet or exceed all applicable local, state, and federal regulations as well as company and industry standards for proper coal ash storage and disposal.

10. Please provide a copy of the company's emergency management, disaster recovery, and contingency plans which outline all of the responsibilities and actions to be taken by the company to properly address coal ash storage and disposal problems.

RESPONSE: The Southern Company Safety Procedure for Dams and Dikes is provided as Attachment A.

11. Please provide copies of any studies, audits, or analyses prepared by the company, or a consultant, on the company's coal ash storage and disposal management process.

RESPONSE: A summary of Gulf Power's coal ash storage and disposal management reports is listed below and the reports are included in Attachment D.

Plant Crist – Dam Safety Inspection Report (2009)
Dam Safety Inspection Report (2010)

Plant Smith – Dam Safety Inspection, Ash Pond Dike Report (2009)
Dam Safety Inspection, Ash Pond Dike Report (2010)
Ash Pond Evaluation (4-23-10)

Hydrologic and Hydraulic Analysis Report of the Ash Pond and Outlet Structure (6-29-10)

Plant Scholz – Dam Safety Inspection, Ash Pond Dike Report (2009)

Dam Safety Inspection, Ash Pond Dike Report (2010)

Field Observations –Scholz Ash Pond Cell 1 Seepage Event (10-11-10)

Plant Scholz Ash Pond Cell 1 Seepage Modeling (11-18-10)

Plant Daniel – Dam Safety Inspection Report (2009)
Dam Safety Inspection Report (2010)

12. Please describe all process improvement activities associated with the company's coal ash storage and disposal management (lessons learned, peer reviews, etc.).

RESPONSE: Gulf Power has always safely managed and maintained its ash storage facilities. As mentioned previously, Gulf Power's weekly inspections and annual safety inspections/assessments of its ash ponds by qualified personnel provide the necessary assurance that the facilities are structurally sound and will safely retain coal ash stored on-site. Gulf Power has implemented the following procedures and practices to ensure safe on-site storage of coal ash:

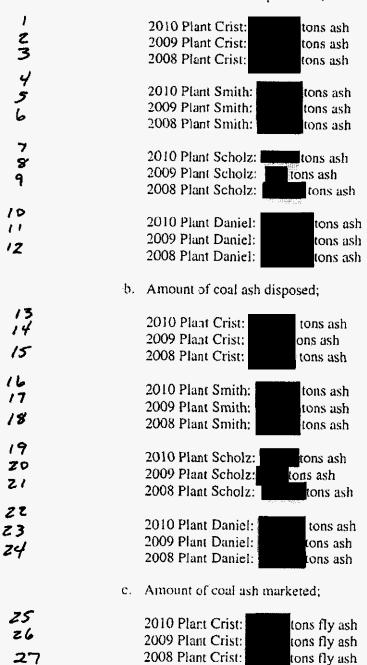
- a. Emergency response numbers and personnel available twenty-four hours a day, seven days a week if necessary;
- b. Plant personnel who conduct ash pond inspections are trained by dam safety engineers annually;
- c. Vegetation on dikes/berms of ash ponds is controlled; and
- d. Any new structures, modifications to existing structures, or changes in maintained sluiced coal ash levels must be reviewed and approved by professional engineers at Southern Company Services prior to and during design and construction.

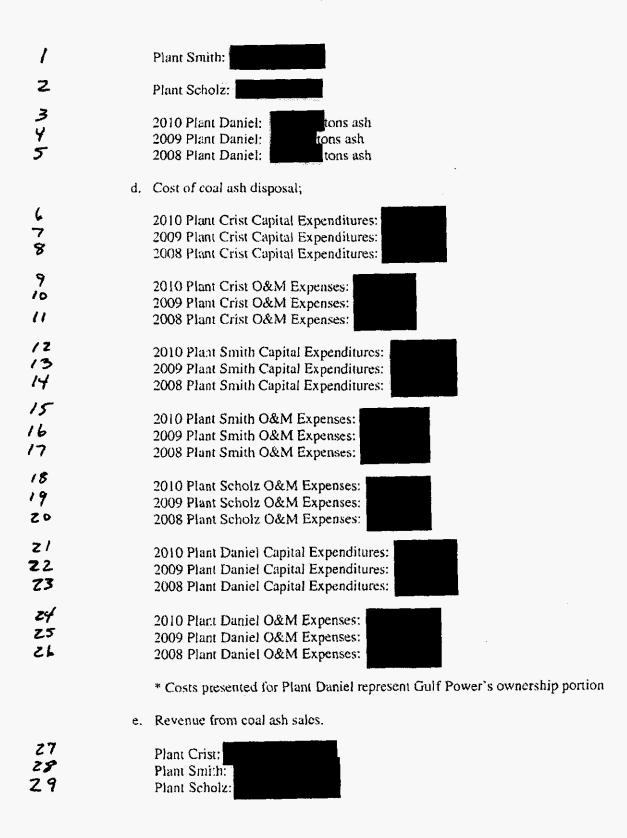
In addition, Gulf Power has initiated the stockpiling of gravel and soil at all ash pond locations in the event that corrective actions might be required. Gulf Power strives to

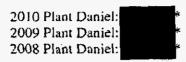
improve its best management practices through continual employee education on new industry standards and process improvements.

13. Please provide the following information for 2008 through 2010:

a. Amount of coal ash produced;







- * Costs presented for Plant Daniel represent Gulf Power's ownership portion
- 14. Did the company participate in the EPA's proposed coal ash rulemaking proceeding on November 19, 2010? If so, please describe the results of such participation and provide any related documentation.

RESPONSE: Gulf Power provided comments on EPA's proposed coal combustion byproduct rulemaking during EPA's public comment period that ended on November 19, 2010. Gulf Power submitted comments as an operating company of Southern Company and as a member of the Florida Electric Power Coordinating Group, Inc. ("FCG"). These comments are provided as Attachment E and Attachment F.

15. Please describe the company's position on issues raised in any other federal, state, und/or local regulatory proceedings involving coal ash storage and disposal management processes.

RESPONSE: Please refer to Attachment G which includes comments FCG provided on the Florida Department of Environmental Protection's ("FDEP") ongoing Industrial Solid Waste Disposal and Beneficial Use ("IWDR") rulemaking during 2003. Gulf Power is not aware of any other regulatory proceedings involving coal ash storage and disposal management processes.

16. Please describe what the company is doing to prepare for, or participate in, other similar regulatory proceedings.

RESPONSE: Gulf Power is not aware of any other regulatory proceedings involving coal ash storage and disposal processes other than EPA's proposed coal ash rulemaking and FDEP's ongoing IWDR rulemaking. If other regulatory proceedings are initiated or scheduled in the future, Gulf Power's participation may include filing comments and/or attending public hearings.

17. a. Please explain the company's position regarding whether coal ash should be classified as a "hazardous substance."

RESPONSE: See Attachment E, Section I. C. 2. (pg. 10) and Section III in its entirety (page 75) and FCG comments, Sections III, IV, and V (pages 8 through 35).

b. If it is ultimately classified as such, then how would this impact the company's coal ash disposal storage and disposal program management processes?

RESPONSE: On June 21, 2010, the EPA published a rulemaking proposal which requested comments on two potential regulatory options for management and disposal of coal combustion byproducts: regulation as a solid waste or regulation as if the materials technically constituted a hazardous waste. Adoption of either option could require closure of or significant change to existing storage units and construction of lined landfills, as well as additional waste management and groundwater monitoring requirements. Under both options, the EPA proposes to exempt the beneficial reuse of coal combustion byproducts from regulation; however, a hazardous or other designation indicative of heightened risk could limit or eliminate beneficial reuse options. Although its analysis is preliminary, Southern Company believes the EPA has significantly underestimated compliance costs in the proposed rule.

The outcome of these proposed regulations will depend on their final form and the outcome of any legal challenges, and cannot be determined at this time. However, additional regulation of coal combustion byproducts could have a significant impact on management, beneficial use, and disposal of such byproducts. These changes could result in significant additional compliance and operational costs that could affect future unit retirement and replacement decisions and results of operations, cash flows, and financial condition. Further, higher costs that are recovered through regulated rates would result in higher rates for our customers and could contribute to reduced demand for electricity, which could negatively impact results of operations, cash flows, and financial condition.

c. What specific changes would have to be made to the existing processes such as modifications to transporting or holding facility practices?

RESPONSE:

The outcome of these proposed regulations will depend on their final form and the outcome of any legal challenges, and cannot be determined at this time. However, additional regulation of coal combustion byproducts could have a significant impact on management, beneficial use, and disposal of such byproducts. These changes could result in significant additional compliance and operational costs that could affect future unit retirement and replacement decisions and results of operations, cash flows, and financial condition. Further, higher costs that are recovered through regulated rates would result in higher rates for our customers and could contribute to reduced demand for

electricity, which could negatively impact results of operations, cash flows, and financial condition.

18. Please describe whether and how the company is addressing the proposed federal regulations and reassessing its coal ash storage and disposal practices consistent with the potential impact such regulations may have on its operations.

RESPONSE: Gulf Power believes that its current coal ash storage and disposal practices are more than adequate to ensure the coal ash that is safely stored/disposed on-site does not adversely affect human health, safety, or the environment. Due to the uncertainty of the final form of the proposed EPA regulations, it is premature for Gulf Power to reassess its ash storage and disposal practices at this time. Gulf Power will continue to monitor EPA's rulemaking activities and will be able to better evaluate the impact to Gulf Power's coal ash management, beneficial use, and disposal after the proposed regulations are finalized.

Document Request 1 (Documents Produced)

Question 2

Document titled Safety Procedure for Dams and Dikes is confidential in its entirety.

Document Request 1 (Documents Produced)

Question 2

Document titled Technical Specification for Ash Stacking (Plant Daniel) is confidential in its entirety.

Document Request 1 (Documents Produced)

Question 2

Document titled Plant Crist Dam and Dike Inspection Guidelines is confidential in its entirety.

Question 2

Document titled Plant Smith Ash Pond Maintenance Plan 2010 is confidential in its entirety.

Question 2

Document titled Fly Ash Disposal and Technical Specifications 2010 (Plant Crist) is confidential in its entirety.

Question 11

Document titled 2009 Dam Safety Inspection (Scholz) is confidential in its entirety.

Question 11

Document titled 2009 Dam Safety Inspection (Crist) is confidential in its entirety.

Question 11

Document titled 2009 Dam Safety Inspection (Smith) is confidential in its entirety.

Question 11

Document titled 2009 Dam Safety Inspection (Daniel) is confidential in its entirety.

Question 11

Document titled 2010 Dam Safety Inspection (Smith) is confidential in its entirety.

Question 11

Document titled 2010 Dam Safety Inspection (Scholz) is confidential in its entirety.

Question 11

Document titled Ash Pond Evaluation (Smith) is confidential in its entirety.

Question 11

Document titled Hydrologic Analysis Report (Smith) is confidential in its entirety.

Question 11

Document titled 2010 Dam Safety Inspection (Daniel) is confidential in its entirety.

Question 11

Document titled October 11, 2010 Field Observation (Scholz) is confidential in its entirety.

Question 11

Document titled 2010 Dam Safety Inspection (Crist) is confidential in its entirety.

Question 11

Document titled November 18, 2010 Ash Pond Seepage Cell 1 Seepage Modeling (Scholz) is confidential in its entirety.

Gulf Power Company Responses to Florida Public Service Commission Office of Auditing and Performance Analysis Review of Coal Combustion Residual Storage and Disposal Processes

DOCUMENT REQUEST 2 July 29, 2011

1. In regard to the company's risk assessment efforts concerning its coal combustion residual storage and disposal operations at all surface impoundments and landfills, please identify each impoundment and landfill and corresponding plant and provide:

Response:

1

Plant Crist – coal combustion residual (CCR) surface impoundment and CCR landfill*
Plant Smith – CCR surface impoundment and CCR landfill
Plant Scholz – CCR surface impoundment
Plant Daniel – CCR surface impoundment and CCR landfill

- * In a July 15, 2011 e-mail, the Florida Public Service Commission's (PSC) Vic Cordiano noted that the PSC's use of "coal ash" in Document Request 1 (DR-1) should be interpreted as including all types of CCR's. Therefore, to clarify Gulf Power Company's (Gulf Power) responses in DR-1, Questions 4 and 5, Plant Crist has a Flue Gas Desulfurization System (FGD system) which produces synthetic gypsum (FGD gypsum). This system was designed to produce high quality FGD gypsum so the material can be either directed to the drying system where it is subsequently stored in a covered storage area to be marketed for beneficial use or it is sent to the existing FGD gypsum pond/storage area where the water in the FGD gypsum is decanted and the decanted water is then conveyed to another pond to be reused in the FGD system. This results in FGD gypsum remaining in the existing FGD pond/storage area. This FGD gypsum remains in the storage area until a possible beneficial use is identified. The existing FGD gypsum pond/storage area is approximately 16 acres and currently has an estimated available capacity of cubic yards. There is approximately cubic yards of storage capacity in the covered storage area.
 - a. reports, recommendations, and resolutions (including dates) associated with the annual safety inspection and assessment for the past three years;

Response: Each annual safety inspection report identified in Gulf Power's response to Question 11 in DR-1 contains recommendations for that respective year and the status of implementation of any recommendations made for the previous year. The annual safety inspection reports for calendar years 2009 and 2010 for each of Gulf Power's plants were previously provided in response to DR-1 (See Attachment D, Gulf Power Response to DR-1 (February 10, 2011)).

b. documentation concerning status of compliance with the permits, i.e., including all records of compliance monitoring and completed permit certification sheets;

Response: Groundwater monitoring reports for each of the plants and the annual surface impoundment certifications, to the extent required by the Florida Department of Environmental Protection (FDEP) or the Mississippi Department of Environmental Quality (MDEQ) are provided in Attachment A.

c. number of weekly inspections performed in the past three years, including documentation (copies of completed inspection forms, checklists, related reports, memos, or other types of correspondence in regard to the results of such inspections).

Response:

Plant Crist – 71 weekly inspections performed as of 12/29/10 Plant Smith – 49 weekly inspections performed as of 12/30/10 Plant Scholz – 30 weekly inspections performed as of 12/27/10 Plant Daniel – 51 weekly inspections performed as of 12/15/10

Weekly inspection documentation for each of the above-referenced plants is provided in Attachment B.

d. descriptions of the problems that have been identified as a result of the weekly inspections and the corrective actions taken;

Response: Please see Gulf Power's response to Question 1.c. and the documentation provided in Attachment B. The documentation provided identifies any issues observed as part of the weekly inspections and any corrective actions taken or recommended.

e. an explanation of the specific preventative steps taken to ensure erosion and other unsafe conditions do not occur.

Response: As set forth in Gulf Power's response to Question 12 in DR-1, Gulf Power has always safely managed and maintained its CCR surface impoundments and CCR landfills. That response outlines typical preventative steps that are taken to ensure erosion and other unsafe conditions do not occur. Also, Southern Company's Safety Procedure for Dams and Dikes (also provided by Gulf Power in response to DR-1) outlines a number of practices to minimize erosion of surface impoundment walls and other unsafe conditions. The Safety Procedure for Dams and Dikes was provided in response to DR-1 (see Attachment A, Gulf Power Response to DR-1 (February 10, 2011)).

2. Based on audit staff's review of Gulf's response to the EPA at http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/surveys/gulf-lansing.pdf, please provide a copy of the inspection report results from the FDEP in regard to its inspection conducted on February 5, 2009.

Response: A copy of the requested FDEP inspection report is provided in Attachment C.

- 3. Please provide follow-up actions concerning all inspection issues that remain open for:
 - a. Plant Crist (April 9 and Dec 10, 2010 inspections);

Response: Please see Gulf Power's response to Question 1.a.

b. Plant Scholz (February 11, 2010 inspection);

Response: Please see Gulf Power's response to Question 1.a.

c. Plant Scholz (October 2 and October 6, 2010 inspections).

Response: The seepage event observed in 2010 at the Plant Scholz CCR surface impoundment did not result in a discharge to waters of the state.

Discovery of the incident and the corrective actions taken by Gulf Power were documented and kept on file in accordance with specific permit conditions in the facility's NPDES permit relating to the CCR surface impoundment. These records (among many others) were available to FDEP representatives during the facility's last NPDES inspection which occurred in February, 2011. Documentation concerning the incident is provided in Attachment D as is the Gulf Power certification letter that mentions the seepage incident and Gulf Power's response thereto.

4. Please complete Exhibits 6A/B for the Daniel and Smith plants.

Response: It is Gulf Power's assumption that Exhibits 6A, 6B, 7A, and 7B attempt to outline/characterize certain of the U.S. Environmental Protection Agency (EPA) requirements proposed in that federal agency's June 21, 2010 rule co-proposals addressing CCRs. Those EPA rule co-proposals are not legally effective and it is unknown at this time when such rules will be finalized by EPA. Nor is it known whether EPA will finalize such rules under Subtitle C (Hazardous Waste) or Subtitle D (Non-Hazardous Waste) of Resource Conservation and Recovery Act (RCRA). Thus, Gulf Power does not believe it is appropriate to use the word "compliance" in any of the Exhibits. Along those lines, Gulf Power respectfully proposes a number of potential changes to those Exhibits. To assist the PSC in better understanding the current environmental regulations applicable to CCR management facilities, Gulf Power provides, in Attachment E, a general outline of the current regulatory framework for CCR landfills and surface impoundments in Florida. Finally, Gulf Power has completed modified Exhibits 6A and 6B for the Daniel and Smith plants as requested. Those modified Exhibits are also found in Attachment E along with modified Exhibits 7A and 7B.

5. What would be the impact (in dollars/month) to ratepayers if the subtitle C, D, or "D-prime" regulations were to be adopted as proposed?

Response: The cost impact of these proposed regulations will depend on their final form and the outcome of any legal challenges and cannot be determined with any certainty at this time.

Gulf Power has prepared an estimated range of costs associated with the potential capital additions necessary to comply with Subtitles C, D and D-prime. The ranges provided are high-level estimates and include a significant amount of uncertainty and should not be relied upon for purposes other than obtaining an order of magnitude with respect to the investment costs and resulting revenue requirements to Gulf's retail customers. Gulf readily admits that these estimates have significant shortcomings but nevertheless, in an effort to provide audit staff with a general estimate the potential impacts are summarized below.

Subtitle C: Gulf's assumption with respect to Subtitle C assumes no change in Florida law which currently prohibits siting of Class C hazardous waste landfills in the state of Florida. Under this assumption, Gulf could be required to: a) close and replace all of its existing coal-fired generating facilities located in the state of Florida and b) excavate, transport and dispose of existing coal combustion residuals to an interstate hazardous waste site around the 2017 time period. Closure of Crist units 4-7, Smith units 1-2, and Scholz units 1-2 would result in the retirement and replacement of 1,355 MW of capacity. The cost to replace 1,355 MW of existing capacity with 1,300 MW of natural gas capacity would range between \$1.3 billion and \$2.0 billion in 2011 dollars depending upon the technologies selected to replace the existing units. In addition to the estimates above, various other costs would be incurred but are not contemplated in the cost estimates provided. Other costs would include transmission costs (new & existing), gas pipeline costs, stranded investment costs, disposal costs of existing CCR's, etc. Just the replacement capacity cost of \$1.3 billion to \$2.0 billion would result in an estimated annual revenue requirement between \$186 million and \$286 million to Gulf's retail customers.

Subtitle D: Adoption of Subtitle D could require closure of, or significant change to, existing CCR storage units and construction of lined landfills, as well as additional waste management and groundwater monitoring requirements. The estimated cost to comply with Subtitle D ranges between \$715 million and \$1.2 billion in capital investments and excludes any estimate of O & M expenditures. The estimated range of \$715 million to \$1.2 billion would result in an estimated annual revenue requirement between \$102 million and \$172 million to Gulf's retail customers.

Subtitle D-prime: Adoption of Subtitle D-prime could require significant change to existing groundwater monitoring requirements. The estimated cost to comply with Subtitle D-prime ranges between \$0.6 million and \$1.5 million in capital investments and excludes any estimate of 0 & M expenditures. The estimated range of \$0.6 million to \$1.5 million in capital investment would result in an estimated annual revenue requirement between \$86,000 and \$229,000 to Gulf's retail customers.

Gulf Power has not developed cost impact estimates in dollars per month for the Subtitle C, D, or D-prime EPA rule co-proposals due to the number of, and degree of variation relating to all the unknown variables. Attachment F includes the calculation of annual revenue requirements referenced in this response.

6. In regard to the EPA's rulemaking (details at http://water.epa.gov/scitech/wastetech/guide/steam_factsheet.cfm), please provide all related documentation such as comments filed, responses to the information collection request submitted, meetings or workshops attended, etc. If the company has not been involved with such rulemaking, please explain the reason(s) for no involvement.

Response: Gulf Power provided its response to EPA's information collection request (ICR) in the above-referenced EPA rulemaking on steam effluent guidelines. A copy of the EPA ICR and Gulf Power's responses are provided in Attachment G.

a. Please identify all plants and their respective coal combustion residual surface impoundments and landfills and provide a detailed description of whether or not each one is a closed-cycle, zero-discharge (CCZD) system.

Response: Please refer to Gulf Power's response to Question 1.a. which identifies all plants and their respective CCR surface impoundments and landfills. The CCR management facilities listed are not closed-cycle, zero-discharge (CCZD) systems. Gulf Power is unaware of any federal or state law or rule that requires implementation of CCZD systems.

b. Please identify each coal combustion residual surface impoundment or landfill that is not a CCZD system and explain the actions taken, or will be taken, by the company to implement a CCZD system.

Response: The CCR surface impoundments and landfills listed in Gulf Power's response to Question 1.a. are not CCZD systems. Gulf Power is unaware of any federal or state law or rule that requires implementation of CCZD systems. As a result, Gulf Power is not undertaking any action to implement CCZD systems at any of the identified CCR management facilities at its plants.

7. For each plant, please provide:

a. the annual quantity of coal combustion residuals beneficially used and the total amount generated at year-end 2008, 2009, and 2010.

Response: Previously, Gulf Power provided information responsive to this request in its response to Question 13.a. and 13.c. in DR-1. In preparing its response to this question, Gulf Power discovered errors in the information previously provided in its responses to DR-1. Therefore, Gulf Power is providing the corrected information below and requests that this information also serve as a supplemental response to DR-1, Questions 13.a. and 13.c.

CCR's generated annually*:

Z

3

2008 Plant Crist: tons ash – FGD Gypsum:
2009 Plant Crist: tons ash – FGD Gypsum:
2010 Plant Crist: tons ash – FGD Gypsum: tons

123	2008 Plant Smith: 2009 Plant Smith: 2010 Plant Smith:	tons ash tons ash tons ash
456	2008 Plant Scholz: 2009 Plant Scholz: 2010 Plant Scholz:	tons ash tons ash tons ash
7 8 9	2008 Plant Daniel: 2009 Plant Daniel: 2010 Plant Daniel:	tons ash ** tons ash tons ash

- * Coal ash figures represent both fly ash and bottom ash generated. Plant Crist is the only Gulf Power facility that generates FGD gypsum.
- ** Figures presented for Plant Daniel represent Gulf Power's ownership portion.

Annual CCR beneficial use volumes*:

```
10
                                     tons ash – FGD Gypsum:
            2008 Plant Crist.
                                     tons ash - FGD Gypsum:
11
            2009 Plant Crist:
 12
            2010 Plant Crist:
                                     ions ash - FGD Gypsum:
13
            2008 Plant Smith:
                                    tons ash
14
            2009 Plant Smith:
                                    tons ash
            2010 Plant Smith:
15
                                    tons ash
16
            2008 Plant Scholz:
                                    tons ash
17
            2009 Plant Scholz:
                                    tons ash
            2010 Plant Scholz:
18
                                    tons ash
19
            2008 Plant Daniel:
                                        tons ash **
20
            2009 Plant Daniel:
                                        tons ash
21
            2010 Plant Daniel:
                                        tons ash
```

- * Coal ash figures represent both fly ash and bottom ash beneficially used. Plant Crist is the only Gulf Power facility that generates FGD gypsum.
- ** Figures presented for Plant Daniel represent Gulf Power's ownership portion.

b. how much and what type of coal combustion residuals (fly ash, bottom ash, boiler slag, and flue gas desulfurization (FGD) solids such as gypsum and calcium sulfite) were produced and where stored or disposed (identify location, e.g., surface impoundment or landfill) at year-end 2008, 2009, and 2010.

Response: Previously, Gulf Power provided information responsive to this request in its response to Question 13.b. in DR-1. In preparing its response to this question, Gulf Power discovered errors in the information previously provided in its response to DR-1. Therefore, Gulf Power is providing the corrected information below and it requests that this information also serve as a supplemental response to DR-1, Questions 13.b.

CCR's stored or disposed annually*: 2008 Plant Crist: ons ash, CCR Landfill- FGD Gypsum: 2009 Plant Crist:

ons ash, CCR Landfill - FGD Gypsum: 2010 Plant Crist: ons ash, CCR Landfill – FGD Gypsum: Landfill

2008 Plant Smith: tons ash, CCR Surface Impoundment 2009 Plant Smith: tons ash, CCR Surface Impoundment

tons ash, CCR Surface Impoundment

tons, CCR

2008 Plant Scholz: tons ash, CCR Surface Impoundment 2009 Plant Scholz: tons ash, CCR Surface Impoundment 2010 Plant Scholz: tons ash, CCR Surface Impoundment

10 2008 Plant Daniel: tons ash, CCR Landfill ** 2009 Plant Daniel: tons ash, CCR Landfill 12 2010 Plant Daniel: tons ash, CCR Landfill

2010 Plant Smith:

11

- * Coal ash figures represent both fly ash and bottom ash disposed. Plant Crist is the only Gulf Power facility that generates FGD gypsum.
- ** Figures presented for Plant Daniel represent Gulf Power's ownership portion.
- 8. For each plant with FGD systems, please identify the plant and explain the design and operating practices to prevent the discharge of FGD wastewater (i.e., scrubber purge) as contaminated runoff or leachate.

Response: The operating areas of the FGD system at Plant Crist have concrete or geosysthetic liners in place to prevent stormwater from coming into contact with the FGD gypsum and potentially impacting groundwater. The stormwater from these areas is conveyed to the existing FGD gypsum pond/storage area and then routed to another pond to be reused in the FGD scrubber system. The only discharge from the FGD system is to a permitted Underground

Injection Control (UIC) well that was approved by the FDEP on February 12, 2009. A copy of the FDEP UIC well permit is provided in Attachment H.

a. Is a certain percentage of the wastewater recycled? If so, please provide the percentage of the wastewater recycled by each plant and describe the recycling process.

Response: Approximately 85 – 95 percent of the FGD system wastewater is recycled for reuse in the FGD system itself. The remaining wastewater discharges from the FGD system (scrubber blowdown and vacuum extraction water from the processing system) are conveyed into the lined FGD pond system where FGD gypsum settles and the remaining water is further conveyed to the return water pond. From that point, the water is routed for reuse in the FGD system. Only a small portion of the FGD system wastewater is removed and injected into the FDEP-permitted UIC well for control of chloride concentrations to facilitate FGD system wastewater reuse.

9. What specific marketing efforts are employed by the company for sale of coal combustion residuals for beneficial use?

Response: Gulf Power has existing contracts with end users of CCRs that beneficially use CCRs for various purposes including wallboard and cement manufacturing, and agricultural uses. Contracts also exist with CCR beneficial use marketers who market the CCRs to end users of CCRs. New CCR beneficial use markets are continually being explored by Gulf Power and the CCR marketers with which it contracts.

- 10. For each applicable plant shown in the attached Exhibits 6A-B and 7A-B, please explain and provide supporting documentation for:
 - a. reason(s) for non-compliance;

Response: As provided in Gulf Power's response to Question 4, it is Gulf Power's assumption that Exhibits 6A, 6B, 7A, and 7B attempt to outline/characterize certain of the EPA requirements proposed in that federal agency's June 21, 2010 rule co-proposals addressing CCRs. Those EPA rule co-proposals are not legally effective and it is unknown at this time when such rules will be finalized by EPA. Nor is it known whether EPA will finalize such rules under Subtitle C (Hazardous Waste) or Subtitle D (Non-Hazardous Waste) of RCRA. Thus, Gulf Power does not believe it is appropriate to use the word "compliance" in any of the Exhibits. Simply put, the reason that Gulf Power's plants do not meet the various proposed EPA requirements is that such requirements are not legally effective. Gulf Power's Plants Crist, Smith, Scholz and Daniel are in compliance with all relevant and applicable federal and state laws and rules pertaining to CCR management. Please refer to Attachment E for a general outline of the applicable environmental regulatory requirements for CCR management units in Florida and Gulf Power modified Exhibits 6A, 6B, 7A and 7B.

b. action plan(s) in place to achieve compliance, including date(s) upon which compliance has been, or will be, achieved.

Response: See Gulf Power's response to Question 10.a. As provided in that response, Gulf Power's Plants Crist, Smith, Scholz and Daniel are in compliance with all relevant and applicable federal and state laws and rules pertaining to CCR management. Thus, there are no action plans necessary to achieve compliance. Due to the uncertainty of the timing and final form of EPA CCR regulations, it is premature for Gulf Power to reassess its CCR storage and disposal practices at this time. Gulf Power will continue to monitor EPA's rulemaking activities and will be able to better evaluate the impact to Gulf Power's CCR management, beneficial use, and disposal after the proposed EPA regulations are finalized.

11. Please supplement your original response to DR-1.10 so that it includes more details concerning the emergency plans in place that specifically address coal combustion residual storage and disposal problems that could occur. Also, please indicate if such plans are in accordance with OSHA or other applicable industry standards.

Response: The plant-specific CCR-related safety plans are provided in Attachment J. Gulf Power is not aware of any OSHA regulation specifically relating to CCR storage and disposal operations. Gulf Power does require, however, compliance with all worker safety standards under OSHA that are applicable to CCR storage and disposal operations at its plants. Nor is Gulf Power aware of any other similar applicable industry standards relating to worker safety in the context of CCR storage and disposal operations. Please refer to Gulf Power's response to Question 4 which references Attachment E. Attachment E includes a general overview of the current environmental regulatory framework for CCR management units in Florida.

INQUIRY No.

PROPOSAL

FORM Attachment I

Bidder's name and address

EQUIPMENT ONLY WASTEWATER TREATMENT SYSTEM

FOR SOUTHERN COMPANY

PLANT CRIST SCRUBBER PROJECT of GULF POWER COMPANY

Southern Company 42 Inverness Center Parkway Bin # B414 Birmingham, AL 35242

1.0 SCOPE

In accordance with your inquiry No. Inviting proposals for Wastewater Treatment system for the referenced generating plant and subject to all conditions and requirements of your Specification, all related attachments and accompanying documents in connection therewith, we propose to design, fabricate, deliver, and commission the equipment for the prices quoted herein. Prizing does not include state sales/use tax.

"Option" is understood to be Purchaser's option.

2.0 PRICING

Note: All pricing P.O.E. plant site; State sales/use tax is excluded

2.4 Proposal 1 - River weter as makeup, discharge to river

2.1.1 Price for providing equipment

For scope of supply as described in the Specifications and Vender Proposal

	2.1.2	Price-for-etart up-assistance	\$	
	2.1.3	Price per day for additional field technical support	\$	
	2,1,4	Maximum traight to plant allo (All freight to be included here)-	\$	
	2.1.8	Price for exection of clariflers (Option)	\$	
	2.1.8	Price for low local siveer agitators (Option) (where beneficial for process charactery)	\$	
	2,1,7	Price for acid/equatic neutralization equipment (Option)		*; · · ·
	2.2	Proposal 31 - Recisim water as makeup, discharge to deep walls		
		For scope of supply as described in the Specifications and Vendor Proposal		
/	2.2.1	Price for providing equipment		
Z	2.2.2	Price for start up assistance	\$	*
5	2.2.3	Price per day for additional field technical support		
4	2.2.4	Maximum freight to plant site (All freight to be included here)	\$: :
5	2.2.5	Price for erection of clariflers (Option)	\$	
6	2.2.8	Price for low local shear agitators (Option) (where beneficial for process chamistry)		<u>*</u>
7	2.2.7	Price for acid/caustic neutralization equipment (Option)		lights
*	228	Price for items which increase filter press automation, minimize maintenance, or siert DCS coersiors there is trouble with the presses (Option)		
9	2.2.9	Price for filter press cloth week system (Option).	\$	Willers .
	ITEMS	BELOW INSERTED BY SIEMENS WATER TECHNOLOGIES		
D	2.2.10	Price for containment during alls sand biasting operation (Option)		(Mary)
ll .	2.2.11	Price for filter press acid wesh (Option)		ĝt
12	2.2.12	Price for conquient storage tank (Option)	3	*
3	2.2.13	Price for invitrochloric acid storage tank & fume scrubber (Option)		Her to the second

Westewater Treatment System

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3	.1	Material prices quoted are:	% fim
			100 % escalated
3	.2	For escalated prices, the follow	wing shall apply:
	3.2.1	Indices to be used (include pe	rcentages applicable to materials, labor, etc.)
	3.2.2	Starting date of escalation	10/47/2007
	3.2.3	Base index Value(s) and base	month Control of the
	3.2.4	Ending date of escalation	
	3.2.5	Limits of escalation	
	3.2.6	Method of calculating escalation	on Control of the Con
4.0		ACCEPTANCE	
		Prices quoted shall be valid fo	r ninety (90) sixty (60) days after proposal date.
5.0		QUALITY ASSURANC	E
			rance Documentation required by Paragraph 8.0 of the General Specification, we will documentation which is generated as a result of our Quality Assurance Program.
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6.0 DESCRIPTIVE DATA AND ENGINEERING INFORMATION

The following descriptive information and design data are furnished in connection with the equipment and materials offered with this Proposal.

6.1 Utility Consumption Data - Plant Crist

Proposal 1

instrument air (also use for service air)	327/100 peak sofm @ psi average sofm @ pal
Potable water	42/60 peak gpm @ pai average gpm @ pai
Service water	210/30 peak gpm @ pai average gpm @ psi
Electricity	1835 peak kW-hrs/day average kW/day

Proposal 2

Instrument air (also use for service air)	an a tra incoperate	poek calm 😩 pel	rografia	sverage sefm @ pel
Potable water		peuk gpm 🧥 psi		average gpm @ psi
Service water		peak gom 🤁 pai		average gom (b) pei
Electricity		Pools HW	ard to bush their	average kW/day

6.2 Chemical Consumption Data - Plant Crist

6.2.1 Chemical Description and Estimated Cost

Proposal

LIONOSEI	
Coaquiant (as 40% ferric chloride)	245 ibs/day @ 97% 100 100 100 100 100 100 100 100 100 10
Polymer	15 lba/day @ 100%
Dewatering Polymer (if needed)	A TOTAL TO THE PROPERTY OF THE NOTE OF THE PROPERTY OF THE PRO
Sulfuric Acid (93%) Hydrochloric Acid	128 lbs/day @ 100%
Sulfide	34 lbs/day @ 100%
Lime (hydrated)	7,200 lbs/day @ 93%
Others	
<u> </u>	

6.2.2 Chemical Dosing Rate

Proposal 1

rioposali i						
Coagulant (as 40% ferric chlorida)	50	mg/L, 100%	10.2	lb/hr, 97%	184, 8087.	gei/hr
olymer	3.447.4	mg/L., 100%	0.625	lb/hr,100%		gai/hr
Dawatering Polymer (if needed)	N/A	mg/L		lb/hr		gai/hr
Sulfurie Acid (93%) Hydrochloric Acid	52	mg/L, 100%	5.3	lb/hr,100%	Septe 14 Contra	gai/hr
Sulfide	150	mg/L, 100%	4 4 4 1.4 2 3 5	lb/hr,100%		gal/hr
.ime (hydrated)	3,094	mg/L, 100%	300	lb/hr, 93%		gai/hr
Others						
		mg/L		lb/hr		gal/hr
		mg/L		lb/hr	Guille College	gal/hr
<u> </u>		ma/L	11548 IV. 354	lb/hr		gel/hr

8.2.3 Chemical Description and Satimated Cost

Proposal 2	
Cosquiant (ss 40% ferris chloride)	
Polymer	
Dewatering Polymor (If needed)	
Sulfurio Acid (93%)	
Suifide	
Lime (hydrated)	
Others	
	[2] [2] [2] [3] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4

6.2.4 Chemical Desiry Refs

Proposal 3			
Congulant (es 40% ferric chloride)	mg/L	lb/hr	gal/hr
Pelymer	ACRES OF SEASON MAC	AND THE PROPERTY OF THE PARTY O	galAss
Dewatering Polymer (if needed)	TATE OF THE STORES IMAGE	ALEXANDER IN INCHES	geline
Sulfurio Aold (03%)	mg/L	TERRITOR STATE IN INCIDENT	gelfir
Bulfide	mg/L	lb/be	gality
Lime (hydrated)	TO PERSONAL PROPERTY MICH.	Control of the second	gelftr
Others			
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	mas.	lb/hr	galAve
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6.3 Wastewater Treatment System Process Description - Plant Crist

Pleas see proposal Section III	A S T L G L G L G L L L L G G G G G G G G G	지난지만 어떻어야 하는 말하지 않아	클래일 시아 모임 (48.1975) 유입 교장	나는 사람은 사진 중요하다면 나는 사람들이 하기
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		. 爱见: "你是一个,只要是是我的一样。"	เรียกเหมือน เป็นเปลา เดือน เรียกให้ เป็นได้	(2) 全部公路(CB) (CB) (CB) (CB) (CB)
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				그 살아 얼마를 가장 아니는 얼마를 다 살아 다른데 다른데 되었다.
It should be not be suffered by the same of street.		그리아 아상님께 살고라 시대에 지나였다.	Selan Toute mer all america	그림에는 이 사이를 위하는 경기를 보았다. 점기
		化二十分 经产品 英国电话电话 计算法		생물은 동생부는 열차가 가지 않는 것이다.
	<i>给马斯语</i> 罗 896.英字说话和点	rechalk i fallawa nika faratak	일 가지하다 경화한다 나를 하는다.	erio di Silboggia di Accide Alegent Regionali
【一位的复数形式编码》 医抗压力 经保险 计多数形式器	na jednika zalija dali sepidi d		주시 : 교육하는 등 경기 전기를 입었다.	HOUSE SUPERING AND THE PROPERTY OF
18.6.50 0.5 subura 19 kd 4 kd 5 kd 6 kd 6 kd	网络多洲美国美洲大学 医多种毒素	and the second of the second second		engel (Taka his in Jawa) sepulah bidi
		uz davá usliša, Pá Šáht Af	(24.5년) 이 저는 강성하다 살아 살아내게 뭐.	
[11] 4. 생님, 24. 14. 14. 4 하스타면 보고 하다.	Vol. 18 - Side and Berling of the Section	Tantanta Lerakata badan	arter populari i koraju og kolej potrije i tilo	

6.4 Equipment Fill in Data

6.4.1 Lime Storage & Feed Equipment

	Proposal 1	Proposal 2	
Bystem Manufacturer	 (2) รับสัญญาสิติส เลือนสิติส สิติส สาราธิส สาราธิส สาราธิส สาราธิส สาราธิส สาราธิส สาราธิส สาราธิส สาราธิส สาราธิส br/>สาราธิส สาราธิส ส		
Storage Silo	·		
Quantity	One (1)		
Effective storage volume	2,667	A LEADING TO RECEIVE OF	ft ³
Inside diameter	12		ft, and in.
Straight side length	40 (overall)	《新聞歌》。 医第二人员的 医皮肤性 的变形	ft. and in.
Cone angle			degrees
Cone height	自分量。这是影響的學科學學學 的		ft. and in.
Material of construction	三世紀中代的「Ca就是在在世界」	Complete South Research	
Interior coating manufacturer/system	None		
Exterior coating manufacturer/system	Sand blast + 2 mils polyamide epoxy + 2 mils acrylic ename!		
Operating weight	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	建筑规则,为自己是为,自己的对于	tons
Storage Silo Fill Line			
Material of construction	Barbara CS	[ATT] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2	
Fill connection type / manufacturer	Quick disconnect		
Compression seal coupling manufacturer			

Die Aeikrains	T		
Bin Activator Manufacturer	Kinergy or equal		
Materials of construction	CS	And the control of the control	
Model No.	KBA-6-HD		
inlet flange size	20 / 10 X X X X X X X X X X X X X X X X X X		
Outlet flange size	的。这些话,只要 12 类似,这种说法。	(4) (4) (4) (4) (4) (4) (4) (4) (4) (4)	
Utility requirements, compressed air or electric and capacity	1.5		hp
Lime Feeder			<u> </u>
Manufacturer	Enpro or equal		
Materials of construction			
Model No.	Series 43		
Capacity Range, to	136-1,356		lbs/hr
Power requirements		And perform the Assessment of the	ub.
Storage Silo Pulse Air Bag	To the VEX Report of the Assert service (Williams)		
Quantity	The first transfer of the second of the seco	Gradu ser ser la medical de la California de la Californi	
Manufacturer			
Materials of construction		NEW PLANS OF SERVICE SERVICES OF THE	
Model No. Air filtration capacity		STOR OLD STOLEN STOLEN	ft³/min
Filter surface area		SCHOOL SERVICES	ft ²
Utility requirements, compressed air capacity		新疆·西西南部市(新州)	scfm
Storage Silo Exhaust Fan			
Quantity	One (1)	D. 只是中国家的国家的国家	
Manufacturer			
Materials of construction			
Model No.		orford and the contraction	1430
Air capacity	The Mark Tracks of the Mark Service		ft"/min
Utility requirements, electric			hp
Lime Silo Level Switches		T 1995 William D. S. Trost, Lat. 1995 on S. H. S. Walder's	
Quantity	One (1) Bindicator or equal/ Rotary	The interior delication of property is a basic delication of	
Manufacturer	Dindicator of Equal		_
Model No.	Detent		1
Type Lime Silo Continuous Level Instrumentation	The Control of Many Spines Supplemental of	The state of the s	
Quantity	One (1)		
Manufacturer	E & H or equal		
Model No.			
Type	Ultrasonic		
Slurry Tank Continuous Level Instrumentation			
Quantify	RALL START SERVED SERVED		
Manufacturer	E & Horequal		
Model No.	Ultrasonic	No. 24 Call and the second sec	
Туре	Ultrasonic		
Sturry Tank	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Nacional Company of Company (Company Company)	
Quantity	One (1) 700	2022 CV840-832-2004 NO	nal
Capacity Operating weight			lbs
Shall material of construction	CS CS	· 经产品的总额 经净多年的现在分类区	
Lining material of construction	Unlined		
Mixer manufacturer	Lighthin or equal	Latina 25, Carres de Celara	
Model No.			
Sturry feed piping material	Carella Carell	医皮肤皮肤皮肤皮肤 法被告	
Equipment Area			<u> </u>
insulation thickness	Not included		in.
Insulation R-value			<u> </u>
Quantity of lights		n Bernapa (benapakan perimpi pengelang) si Propi Benapalah pengenangan pengelangan pengelangan	
Type of lights			
Light wattage, each interior coating manufacturer/system		A REAL PROPERTY AND A SECOND CONTRACTOR OF THE PROPERTY OF THE	
Heater size	10		kW
Access door opening size, W x H			ft. and in.
Exhaust fan air capacity	· 自然,是一种,是一种,是一种,是一种,是一种,是一种,是一种,是一种,是一种,是一种		ft³/min
Power requirements	1/3		hp
Lime Slurry Feed Pump(s)	<u></u>		<u> </u>
General Data			
Pump manufacturer	Warman or equal		
Model			<u> </u>
Type	 Legal Committee (Market Committee /li>		
Connections			
Size	 Britan de l'acte de la contraction de l'acte de la contraction de la co	- 1	

Flange Class			
Suction Discharge	一门门 经工作证券 医二氯化二氯化二氯化钠 医神经神经		:
Net weight			
Pump (less motor)	10. 自然、自己主席的经过支持的经验。		ib
Baseplate			lb
Performance Data, each pump			rpm
Rotative speed Flow rate at which maximum power requirement occurs			gpm
Recommended minimum continuous flow (recirculation)			gpm
Seal water flow/pressure required	The section of the se		gpm and pai
Guaranteed performance, each pump		. 20. Table 20. Sept. 1 (1) 10. Sept. 1 (1) 10. Sept. 1 (1) 10. Sept. 1 (1) 10. Sept.	
Capacity at design conditions	78		gpm ft H₂O
Total head at design conditions	90	\$\frac{1}{2}\text{\$\frac{1}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}{2}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\text{\$\frac{1}\te	ft H ₂ O
center line	 a. am expect a miller regulation of participal residents. 	[4] [雷斯基特][5] "Law 5 / All Solid Control () [4]	96
Pump efficiency at design conditions Maximum shutoff head			ft H₂O
Power requirements	musika ma atu sulayugansa kebasir		1
At design conditions	 환경 보고 하는 한 글 하면 한 가득을 받는 하는 환경 말은 한 것 같은 하면 하나라는 한 글로 하면 하고 	者は ●読刊、中央は196、では4年でも決定的ですの単位によりでは10支払	hp
At shutoff			hp
Maximum	[1] [1] [1] [1] [1] [1] [1] [1] [1] [1]		lhp
Pump Construction			
Impeller diameters	10 (4) (10) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4		
Design Maximum available			in.
Minimum available	一、直下的特别的数据,其中的基础。	i a ser v cara e taja elem de talak	in.
Materials	the second secon	and the later of the control of the state of the control of the co	S .
Casing			:
Shaft			:
Impeller			
Shaft sleeves Impeller wearing rings			
Casing wearing rings			
Type of bearings		是一部的 1995年	4
Radial			
Thrust			:
Mechanical shaft seal Manufacturer			
Model No.			
Shaft diameter	· · · · · · · · · · · · · · · · · · ·		č:
At bearing location(s)			in.
At seal packing location(s)			in.
Sleeve, outer diameter			1116
Coupling Manufacturer			<u> </u>
Model No.			95
Rated power/service factor			hp
List of special tools which will be furnished	None		
Field assembly work required Shipping weight			lbs
Mixer	Rea	Dena R	1
Manufacturer	ALL TO THE CONTROL OF THE PARTY OF		i.
Materials of construction			
Connection Type (baseplate or flanged)	 【1.43111.54761.4516.4516.4516.4516.4516.4516.4516.45		: t
Model No.		[14] [14] [14] [14] [15] [15] [15] [15] [15] [15] [15] [15	ie-
Local Control Panels Panel size (L x W x H)			ft and in
Panel size (L x yv x n) Panel approximate weight			lbe
Manufacturer			9. 3:
Model		nt brokenson part of the second	9
Programmable Logic Control Systems	No sep	erate PLC	1
Manufacturer			a S
Model No. Low Voltage Induction Motors		neli. I Nama ang kanaga manga jaya najawa i misa ing mangan ing	1
Motor manufacturer	· 建筑设计划2003年被数据3000000000000000000000000000000000000	的。 是由对这样的 的是可能的特别。在我们	4
I THE SECTION OF THE PROPERTY OF	Department of the control of the con		C.
Model number		Stand Control of the State of t	-
	1962 P. 10 P		-

Motor nameplate	hp
Service factor (NEMA/IEEE motors only)	
Motor bearing type	
Motor efficiency at nameplate, hp, percent	
Bearing lubrication system	
Space heater rating (watts / voltage / phase)	[1] "自然为自然,就是他被抗酷的最后的。" 在第二次,但是自己的第三人称单数,在唯他

8.4.2 Solide Contact Equipment

	Proposal 1	Proposal 3	
larifier	Wastewater Cla	rifler A & B	
Quantity	Two (2)	名表表表。"Ballin 12,并如此为。	
The second secon	Coated CS; Coatings by		
Materials of construction	Purchaser		
Minimum system capacity	23 (FGD purge flow)		gpm .
Maximum system capacity	180 (FGD purge flow)		gpm
Average effluent turbidity	N/A	建筑建筑设置,建筑设置	NTU
Average effluent suspended solids	30	经验证 (1) (4) (2) (4) (4) (4) (4)	mg/L
Maximum rate of flow increase without effluent quality	19.75	是16年2月日建設的企業的	gpm/hr
Influent water temperature rise limitation	19.50 FE 19.50 TE 20.50 TE 20	要是是自己的 是一个一个	*F/hr
Underflow solids concentration	6	公司,对于 其中的关键。	% weight
Diameter	23, 18, 18, 18, 18, 18, 18, 18, 18, 18, 18	数 是是不是《 记录》是《记录 》。	ft
Height	30	建 544年的正式。1444年的正式。	ft
Reaction well dimensions	· · · · · · · · · · · · · · · · · · ·	建设在1000年,但不是国际企业的	ft
Recirculation rate (as % of inlet flow)	1,100		
oraper Drive Unit			
Manufacturer	DBS	整理等。但是是100000000000000000000000000000000000	
Materials of construction	C82	表现是对方的 计自己的	
Model number		整定 中心原则是这种"这种形态"。	
Туре			
Motor Data		是各种的1975年8年4月1日,1975年8月	
Manufacturer		美国的国际中心	
Enclosure	YNESD FEECTOR	green net. Rate Miletin.	
Horsepower at design conditions	0.75	A CHECOGO DE LETTOR CONTROL PAR	hp
Service factor	F 20 10 10 10 11 15 16 16 16 16 16 16 16 16 16 16 16 16 16	Section 1. The Contract of the	L
Voltage/Phase/RPM	460/3/1750	第二届第二届第二届第二届第二届第二届	
Variable frequency drive	No	新发展的企业的基础的。	<u> </u>
Manufacturer		\$ 54 mg 4 454 2 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u> </u>
Model number		property and the beautiful and an analysis	<u> </u>
Туре		ARKKEN BEG KURTUKA	
Motor Data			<u> </u>
Manufacturer	· · · · · · · · · · · · · · · · · · ·	A STATE OF THE STA	<u> </u>
Enclosure			
Horsepower at design conditions			hp
Service factor			<u> </u>
Voitage/Phase/RPM		"是这是是这个人的问题的	<u> </u>
Variable frequency drive			
Voltage/Phase/RPM		SAMPLE SAMPLE SERVICE	
Variable frequency drive		新學學等可以可以對於	
Guaranteed Clarifier Effluent Quality			
Turbidity	No guarantee		NTU
Suspended solids	30 (expected; not guaranteed)		mg/L

6.4.3 Agitator

A Brown as	Proposal 1	Proposel 3	
Agitator	Desaturation	on Tank Agitator A & B	
Manufacturer	Lightnin or equal		<u> </u>
Connection Type (baseplate or flanged)	· · · · · · · · · · · · · · · · · · ·		
Model No.	74Q5		
Weight			lb
Impelier diameter	40		in.
Impeller(s) height from floor	《沙里》中的一个人的一个人的一个人的一个人的一个人的一个人的一个人的一个人的一个人的一个人		in.
Minimum submergence required from tank bottom		发展的现在分词形式	ft. and in.
Shaft length	258*	电影的现在分词形式的影响的	ft. and in.
Blade angle			degrees
Number of blades	Two (2)		
Number of baffles required in basin	Three (3)		
Dagrees between baffles	120	r, pys., is is to live year, as as	
Baffle dimensions, L x W x H	10" wide x 251" high		ft, and in
Impeller and shaft material	C8		
Impeller and shaft covering material	Rubber Ined		
Impeller and shaft covering thickness		2 磷铁 异甲基甲基磺胺 医红斑病	in.

Tank Bridge Loadings			
Bending moment			ibf-ft
Torque	人等等等等等等等等等等等等等		lbf-ft
Axiai Load			lbf
Gear reducer			<u> </u>
Manufacturer	14年以前,他的原理等(J. S.		ļ
Model No.	。 1. 14.15. 14.15.14.15.15.15.15.15.15.15.15.15.15.15.15.15.		
Reduction ratio (;)	(1) 對為。公司。該於李統統的於公司。		ļ <u></u>
Number of reductions			
Service factor		i bilat dikana bila bila bila di	
Performance data			
Operating speed	84		rpm
Critical shaft speed			rpm
Tip speed	中的 每,0世纪的为前于10年对这些	生物不足 经国际通过国际和国际	ft/a
Low Voltage Induction Motor			
Motor manufacturer	第四次是基本基本的现在分类		1
Model number			
Driven Equipment			
Design standards (e.g., NEMA/IEEE, IEC)			
Oriven equipment maximum brake horsepower	是一种自由的一种主义的。但是有关		hp
Motor nameplate, hp (kW)		(2) 大学では、大学では、大学では、大学では、大学では、大学では、大学では、大学では、	
Service factor (NEMA/IEEE motors only)			
Motor bearing type		TANGE SECTION OF SECTI	
Motor efficiency at nameplate			hp, %
Bearing lubrication system	[1] 新工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工	for parties of realizations by a process	
Space heater rating (watts / voltage / phase)			
	Proposal 1	Proposal 2	
Agitator		Mix Tank Agitator A & B	
Manufacturer	ightain ar agual		
Connection Type (baseplate or flanged)	Parties and administration of		
Model No.	73Q5	A PRESCRIPTION OF THE PROPERTY.	
Weight	TO SEE TO SEE TO LOST MEN DESCRIPTION OF THE SEE		lib
impeller diameter	A SECTION OF THE CONTRACT OF T	an mark years that the same and the same and	in
Impeller(s) height from floor			in
Minimum submergence required from tank bottom	The first state of the section against the virial section of the s		ft, and in.
Shaft length	464		ft. and in.
Biade angle	Telefore of Administration is a problem	3 3 9 6 6 6 1 1 2 1 1 2 1 1 2 1 3 1 3 1 3 1 3 1 3 1	degrees
Number of blades	Two (2)		Cedies
Number of baffles required in basin	Three (3)		
	(0)		
Degrees between baffles Baffle dimensions, L x W x H	77 114- 2 (40) 51-5		ft. and in.
impeller and shaft material	MOS X 100 HIGH SAN		IL. arko III.
	■ 1. ***********************************		
	CS B. C. B.	Ber leite Seit Lieu (1906 Blade) Ber John Dettell Seit leite Zustelle Seit Hill Statt der Seiter der	
impeller and shaft covering material	CS Rubber lined		
impeller and shaft covering material impeller and shaft covering thickness	CS Rubber lined		in,
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings	ļ		
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment	ļ		lbf-ft
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque			lbf-ft lbf-ft
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load			lbf-ft
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer			lbf-ft lbf-ft
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer			lbf-ft lbf-ft
Impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No.			lbf-ft lbf-ft
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Menufacturer Model No. Reduction ratio (;)			lbf-ft lbf-ft
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions			lbf-ft lbf-ft
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor			lbf-ft lbf-ft
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data			lbf-ft lbf-ft lbf
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed	120		lbf-ft lbf-ft lbf
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed	126		Ibf-ft Ibf-ft Ibf
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed	120		lbf-ft lbf-ft lbf
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Low Voltage Induction Motor	128		Ibf-ft Ibf-ft Ibf
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer	128		Ibf-ft Ibf-ft Ibf
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio () Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number	128		lbf-ft fof-ft bf
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Model number Driven Equipment	128		Ibf-ft Ibf-ft Ibf
Impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC)	126		ibf-ft ibf-ft ibf rpm rpm ft/s
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower	128		ibf-ft ibf-ft libf rpm rpm ft/s
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Menufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage Induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower Motor nameplats, hp (kW)	128		ibf-ft ibf-ft libf rpm rpm ft/s
Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Medicturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage Induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower Motor nameplate, hp (kW) Service factor (NEMA/IEEE motors only)	128		ibf-ft ibf-ft ibf rpm rpm ft/s
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower Motor nameplate, hp (kW) Service factor (NEMA/IEEE motors only) Motor bearing type	128		ibf-ft ibf-ft ibf rpm rpm ft/s
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower Motor nameplate, hp (kW) Service factor (NEMA/IEEE motors only) Motor bearing type Motor efficiency at nameplate	128		ibf-ft ibf-ft ibf rpm rpm ft/s
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower Motor nameplate, hp (kW) Service factor (NEMA/IEEE motors only) Motor bearing type Motor efficiency at nameplate Bearing lubrication system	120		ibf-ft ibf-ft ibf rpm rpm ft/s
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower Motor nameplats, hp (kW) Service factor (NEMA/IEEE motors only) Motor bearing type Motor efficiency at nameplate	126		ibf-ft ibf-ft ibf rpm rpm ft/s
impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor Performance data Operating speed Critical shaft speed Tip speed Low Voltage induction Motor Motor manufacturer Model number Driven Equipment Design standards (e.g., NEMA/IEEE, IEC) Driven equipment maximum brake horsepower Motor nameplate, hp (kW) Service factor (NEMA/IEEE motors only) Motor bearing type Motor efficiency at nameplate Bearing lubrication system	126 3 1.15		ibf-ft ibf-ft ibf rpm rpm ft/s

Operating speed

N/A		
Aren barren Müdzeti Artik		
		ib
	医多种性 医克勒氏试验检	in.
· [4] "我们是有关的。" 在一个人的人的复数形式	经营销的基本的基本的基本的基本的	in.
		lft, and in
	国际的国际的现在分词形式 医克拉氏	ft. and in
	1 医第四型 制度 医多次多种	degrees
(表) (表) (是) (基) (基) (基) (基) (基) (基)		
【最初的社会》的表現的概念。		
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16. 16. 16. 16. 16. 16. 16. 16. 16. 16.		ft. and in
	。 第25条 使 146 1018 486 1518 1514 1519 151	
[FUEL SET 1986] 第一型1250年 1864年第	SET PERMITTANCE	
	。 1980年在1980年2月1日至1981年1月1日	ln.
	· 与外院是第二届出了新国际等级。专行	lbf-ft
		lbf-ft
		ibf
	5 黄龙江大学、高广东市第二年	
Section Control Sense Control		1
Response to the property of the second	A REMARK SALES PER PER SALES	
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TO SEE THE PROPERTY OF THE PARTY OF THE PART		прпп
	Carrier Compression and Compression	rom
	Paging Commission of the Additional of	ft/s
		†
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THE STREET STREET STREET STREET STREET	200 A C PAS & ASS (40 NO.)	
FELT 17 TO 18 CONSIST REPORTED	V SHAROVE ROMANIES STORES	
Prof. North Committee and the Mark Charles of	1 Page 12 Professor (2010) (\$7.95° 13)	hp
Compared to the Compared Francis and Table	建设设置,是图到成为产品。在1990年 8	
	S. P. B. Tarani, S. Barrer Salah Barrer	
		:1
POPER STANDARD OF CONTROL STANDARD	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	四基指达的1500以及11数1200元 (元)	hp. %
		hp, %
		hp, %
		hp, %
Proposal 1	Proposal-2	hp, %
Proposal 1	Proposal 2 Tenk Agitator A & B	hp, %
Proposal 1	Proposal 2 Tenk Agitator A & B	hp, %
Proposal 1 Plash Mix	Proposal-2 Tank Agitator A & B	hp, %
Proposal 1 Flash Mix N/A	Proposal 2 Tank Agitator A & B	
Proposal 1 Flash Mix N/A	Proposal-2 Tank Agitator A & B	lb
Proposal 1 Plash Mix N/A	Proposal-2 Tank Agitator A & B	lib
Proposal 1 Flash Mix	Proposal 2 Tank Agitator A & B	lib In.
Proposal 1 Flash Mix	Proposal 2 Tank Agitator A & B	lib In.
Proposal 1 Flash Mix	Proposal 2 Tank Agitator A & B	lib In.
Proposal 1 Flash Mix	Proposal 2 Tank Agitator A & B	lib In.
Proposal 1 Flash Mix	Proposal 2 Tank Agitator A & B	lib In.
Proposal 1 Flash Mix N/A	Proposal 3 Tenk Agitator A & B	lib in. in. ft. and ii ft. and ii
Proposal 1 Flash Mix N/A	Proposal 3 Tenk Agitator A & B	lib in. in. ft. and ii ft. and ii
Proposel 1 Flash Mix N/A	Proposal-3 Tank Agitator A & B	lib in. in. ft. and ii ft. and ii
Proposal 1 Flash Mix N/A	Proposal 3 Tank Agitator A & B	ib in. in. ft. and if degrees
Proposal 1 Flash Mix N/A	Proposal 3 Tank Agitator A & B	ilb in. In. ift. and i ift. and i
Proposel 1 Flash Mix N/A	Proposal 3 Tank Agitator A & B	ilb in. In. ift. and i ift. and i
Proposal 1 Flash Mix N/A	Proposal-2 Tank Agitator A & B	ib in. in. ft. and i ft. end i ft. and i
Proposal 1 Flash Mix N/A	Proposal 3 Tank Agitator A & B	ib in. If. and if ft. and if ft. and if in.
Proposal 1 Flash Mix N/A	Proposal 3 Tank Agitator A & B	ib in. In. Ift. and ift. and ift. and iiii.
Proposal 1 Flash Mix NA	Proposal 3 Tank Agitator A & B	ib in. In. Ift. and ift. and ift. and iiii.
Proposal 1 Flash Mix N/A	Proposal 3 Tank Agitator A & B	ito in. in. ift. and if the and if the and if ift. and ift. and if ift. and ift. and ift. and if ift. and ift. and ift. and if
Proposal 1 Plash Mix N/A	Proposal-2 Tank Agitator A & B	ib in. In. Ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift. and ift.
Proposal 1 Plash Mix N/A	Proposal-3 Tank Agitator A & B	ib in. In. ft. and in ft. and in ft. and in in. in. ibf-ft libf
Proposal 1 Plash Mix N/A	Proposal-3 Tank Agitator A & B	ib in. In. ft. and in ft. and in ft. and in in. in. ibf-ft libf
Proposel 1 Flash Mix N/A	Proposal 3 Tank Agitator A & B	ib in. In. ft. and in ft. and in degrees ft. and in in. in. ibf-ft. ibf-ft
Proposal 1 Plash Mix N/A	Proposal-3 Tank Agitator A & B	ib in. In. ft. and ir ft. and ir ft. and ir ir. ibf-ft ibf-ft

Critical shaft speed			mem (100 and 100 and
Tip speed			ft/s
Low Voltage induction Motor			
Motor manufacturer			42 043
Model number		rejen falerak errektive bildilik i	C.C. Ch. Cas.
Driven Equipment Design standards (e.g., NEMA/IEEE, IEC)			
Driven equipment maximum brake horsepower		i Nate — General de Maria de la casa de la c	Marie IS IA. Transport Inc
Motor nameplate, hp (kW)		ing the state of t	, de la tenta de la composición del composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición
Service factor (NEMA/IEEE motors only)			era gisal
Motor bearing type.		ASK 2011 HAMSBERS OF	
Motor efficiency at nameplate			of Marculan %
Bearing lubrication system		aka kewasi si sa sa la	3.40.40.50
Space heater rating (watts / voltage / phase)			\$\$. <u></u>
	Proposal 1	Proposal-2	
Agitator	Wastewa DBS	ter Clarifier Turbine A & B	
Manufacturer Connection Type (baseplate or flanged)			Militari Militari Tamban Ariya
Model No.			720 Table
Weight			lb
impeller diameter			ln.
impeller(s) height from floor	可在我们的"Apple 400" 第四条		
Minimum submergence required from tank bottom			ft. and in.
Shaft length			ft. and in,
Blade angle Number of blades			degrees
Number of baffles required in basin			9250413. 2250413
Degrees between baffles			
Baffle dimensions, L x W x H		。如今 整落的 的复数多种 美国巴黎	ft. and in.
Impelier and shaft material	C8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	经验证的 证据	
Impeller and shaft covering material	Cellcate (by Purchaser)		
Impeller and shaft covering thickness		· 图 10 10 10 10 10 10 10 10 10 10 10 10 10	in.
Tank Bridge Loadings Bending moment			STRAIGHT A 1LEA
Torque			ibf-ft
Axial Load			ibf
Gear reducer	and the second s		IMI
Manufacturer	。至于大学发展的影响,是网络多名,多	van moaspronalingan.	(Section 1975)
Madel No.			
Reduction ratio (;)			
Number of reductions			
Service factor Performance data	- (4.1)、2m/x (5mgm)、20 (5.1) いっぱい。 い 智様的なな	en Personality Statement	A201-19900 N
Operating speed		ารู้จัก ค. ฮาสรีล้าง เล่อสร้าง เกอร์สลักลับกร้าง	nem .
Critical shaft speed			rpm
Tip speed	"我们是我们的对象是是是完全是		ft/s
Low Voltage Induction Motor	The state of the s		
Motor manufacturer			AGNS CON AND
Model number			SECTION OF
Driven Equipment	 1. 公司、公司等基本的股份的特別是各种提供 1. 不完全的发展。如此其中的联系中的联系。 		(4.675) (4.675) (4.675) (4.575)
Design standards (e.g., NEMA/IEEE, IEC) Oriven equipment maximum brake horsepower			hp
Motor nameplate, hp (kW)	2		
Service factor (NEMA/IEEE motors only)	11580		STATES TO THE
Motor bearing type		。在一次是在独立工程的 是	Carlos (Maria)
Motor efficiency at nameplate		全型。在1965年1965年1965年1965年1965年1965年1965年1965年	
Bearing lubrication system			
Space heater rating (watts / voltage / phase)	December 4		ši s dajiruž
Agitator	Proposal 1	Proposal 2 Holding Tank Agitator	
Manufacturer	Lightnin or equal		Charles
Connection Type (baseplate or flanged)	Lightnin or equal	PENERTY CONSIDER MEMORY	
Model No.	74Q7.5	[4] [4] [4] [4] [4] [4] [4] [4] [4] [4]	Magazina (magazina)
Weight			
Impeller diameter	48		
impelier(s) height from floor			in,
Minimum submergence required from tank bottom Shaft length	2287		
Shart length Blade angle			
Number of biades	One (1)		a contract
	76		JA 12 15 4 15
Number of baffles required in basin	 District of the control	The Committee of the State of Contract of the	ethir ad Mid

Baffle dimensions, L x W x H	12" wide x 215" high	机多级合金 医小皮皮质性外外	ft. and in.
Impeller and shaft material	Bernelling (CSM)		
Impeller and shaft covering material	Rubber lined	ENERGIES TOTOLOGISCO	
impeller and shaft covering thickness		是实现的现在形式。13.12是我们对100%	in.
Tank Bridge Loadings			
Bending moment	自己的自己的证据,是更加不知识的。	,这是从是只要的现在分词的	lbf-ft
Torque		经国际公司 马克尔斯曼 电影电影	lbf-ft
Axial Load		Bully a line of the same and a first of the	lbf
Gear reducer	·		
Manufacturer			
Model No.			
Reduction ratio ()			
Number of reductions			
Service factor		数字包设备。为此设置第 号	
Performance data			
Operating speed	84		rpm
Critical shaft speed	是这是不是有的。 第二章	X XXX	rpm
Tip speed		新兴市的大学的	ft/s
Low Voltage Induction Motor			
Motor manufacturer	というできた。大学を出る研究を	经验完全企业的经验的	
Model number		数据的数据数据的数据数据数据数据数据数据数据数据数据数据数据数据数据数据数据数	
Driven Equipment		建筑设置,建筑设置,建筑设置	
Design standards (e.g., NEMA/IEEE, IEC)	计划的复数形式要求企作的	製造を設定を必要を発する。	
Driven equipment maximum brake horsepower		的发生的特殊的企业的基本实际	hp
Motor nameplate, hp (kW)	7.5 Per 1990		
Service factor (NEMA/IEEE motors only)	性的原理學學與 [15]	多名言文 经本金属的条件	
Motor bearing type		。	
Motor efficiency at nameplate			np, %
Searing lubrication system	1977年中国的基础的企业,但是是1976年的工程的。	据在MIEGO WEST 10 6 YOU	
Space heater rating (watts / voltage / phase)	1. 19 12 EL 19 25 EL 19 25 EL 19 19 19 19 19 19 19 19 19 19 19 19 19		

	Proposal 1	Proposal-2	
Agitator	Clarifier Blowdown Sump Agitator	Filtrate Sump Agitator	
Manufacturer	N/A	Lightnin or equal	
Connection Type (baseplate or flanged)		Burghar and sale as	i.
Model No.		72Q3	á.
Weight		FERMAL VARIOUS WENG	lb lb
Impeller diameter		45	in,
Impeller(s) height from floor		发展的现在分词 有一种企业	a in.
Minimum submergence required from tank bottom	· · · · · · · · · · · · · · · · · · ·	是对有我医心脏多 处生的	ੀt. and in
Shaft length	edicentarias contes. Special	120	ft. and in
Blade angle			degrees
Number of biades			3.2. - 1.
Number of baffles required in basin		N/A .	¥.
Degrees between baffles		N/A	3
Baffle dimensions, L x W x H		N/A	ft. and in
Impeller and shaft material		CS	ii)
Impeller and shaft covering material			
Impeller and shaft covering thickness	自然是是是是是 (Explained and Explained and Explai	为为2、100000000000000000000000000000000000	in.
Tank Bridge Loadings			
Bending moment	等的。 1971年的新疆域上的基础的工作基础等级。	但不可能的知识的思考的学习	lbf-ft
Torque		可なからは、例で、一般では、大学に	lbf-ft
Axial Load		。 10年的自己的企业的自己的	् lbf
Gear reducer			
Manufacturer		的现在分词的现在分词	71.
Model No.		常知道。特殊是是基础的	
Reduction ratio (:)		是"特别是在1965年"的"特别"的"特别"的"特别"的"特别"的"特别"的"特别"的"特别"的"特别	2
Number of reductions		是是自由的经验的 医多种动物	Ų.
Service factor		THE PROPERTY OF THE PARTY OF TH	<i>3</i> 1
Performance data			
Operating speed	Altra engagement di Banke Jingda		rpm
Critical shaft speed	[1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996] [1996]		rpm
Tip speed	A 18 18 18 18 18 18 18 18 18 18 18 18 18		ft/s
Low Voltage Induction Motor			
Motor manufacturer	,这种是特殊的特别的基本实现的大利		52 50
Model number			ě
Driven Equipment			Ĉ.
Design standards (e.g., NEMA/IEEE, IEC)	表示: 18.10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		r,
Driven equipment maximum brake horsepower			hp
Motor nameplate, hp (kW)		3 2 4 2 2 3 2 4 5 2	i i
Service factor (NEMA/IEEE motors only)		1.15	9.5
Motor bearing type			Y

Motor efficiency at nameplate	[hp, %
Bearing lubrication system	
Space heater rating (watts / voltage / phase)	

8.4.4 Inlet Flow Instrumentation

	Proposel 1 Proposel 2	
Raw FGD waste water flow transmitter		
Manufacturer	Rosemount	
Model number	8732CR12N0M4	
Primary elements type	Magnetic	1
Primary elements manufacturer	Rosemount	
Differential pressure loss at design flow rate	<0.1° &	рві
Raw FGD waste water flow control valve		
Manufacturer		
Model number	2516	3
Size		
Differential pressure loss at design flow rate	上的长年,其中的一直 10X 美国的人类的人类的 10X 美国的人类的 10X 美国的人类的 10X 美国的人类的 10X 美国的人类的 10X 美国的人类的 10X 美国的人类的人类的人类的人类的人类的人类的人类的人类的人类的人类的人类的人类的人类的	pai

8.4.5 Liquid Chemical Feed Equipment

adam onomon i con Equipmen	Proposal 1	Proposal 2	
hemical Feed System	Coagulant		
Pump Information			
Quantity	Three (3)		
Manufacturer	Milton Roy or equal	计算数据的数据的数据	
Туре	Diaphragm	2. 化分化分类等等的多类等的指数的。	1
Model No.	Effect Belling Conference agency (175)		
Maximum capacity	1.5		gph
Discharge pressure	100		psig
Hydrautic reliaf valve setting			paig
Materials of construction	PVC liquid end		
Calibration Columns			
Quantity	One (1) x (1.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	第167里有此处是是被称为《 》 。	
Manufacturer			
Model Na.	內部推開於各種的基本與		
Volume, gal	250 mL	· · · · · · · · · · · · · · · · · · ·	
Materials of construction	Plaste	第一名的文字文字,在1000年至2000年第56年	
Chemical Injection Quill or Static Mixer			L
Quantity	None		
Manufacturer			
Materials of construction			
Strainers			
Quantity	One (1)	京 新发生现 经分别分割 美洲	
Manufacturer			
Model No.	CRYC		
Materials of construction	CPVC	[4] [4] [4] [4] [4] [4] [4] [4] [4] [4]	
Back-Pressure Valves			
Quantity	Two (2)		
Manufacturer	是是自然的问题。 10. 是自然的问题。 10. 是是自然的问题。 10. 是是自然的可能的可能的可能的可能的可能的可能的可能的可能的可能的可能的可能的可能的可能的	经 医原元 经存货 使力能处理的	L
Model No.	DISTRESS HEARING THE PROPERTY OF THE PROPERTY	数量的主要。在1000年2000年100日	
Relief valve setting	A CHARLES THE SERVICE OF THE SECOND S		psig
Materials of construction	CPVC	CAPTURE OF THE SECOND S	
Valves			
Тура	Ball	生物 性物质的多种种种种的	
Manufacturer	GF or equal		
Model No.			
Materials of construction	CPVC		
Power consumption for this system/subsystem	4/14/5/18/5/1 /1/2 /5/5/5/5/5/5/5/5/5/5/5/5/5/5/5/5/5/5/		hp

	Proposal 1	Propossi-2	
Chemical Feed System	Sulfurie Hydrochlorie Acid		
Pump Information			
Quantity	Two (2)		
Manufacturer	Milton Roy or equal		
Туре	Diaphragm		
Model No.			
Maximum capacity	2.5	gph	
Discharge pressure	100	paig	
Hydraulic relief valve setting		paig	
Materials of construction	PVC liquid and		
Calibration Columns			
Quantity	One (1)	等A 具有基础的具有基础的基础的基础的	
Manufacturar			

Mariathia		A SECTION OF THE SECT	
Model No. Volume, gal	250 mL		
Materials of construction	Plastic		<u> </u>
Chamical Injection Quill or Static Mixes	Please.	The Control of the second seco	-
Quentity	One (1)		
Manufacturer	LMI or equal		
Materials of construction	CPVC CONTRACTOR		
Strainers			
Quantity	One (1)	2. 財政部分表示。 (2. 対政部分表示)	ļ
Manufacturer			
Model No. Materials of construction	C PAGE		
Back-Pressure Valves	- CFVO	and the same that the same state of the same sta	
Quantity	One (1)		
Manufacturer			
Model No.			
Relief valve setting	.505.146.950.005.000 XXX.8515.5	es zenyaven kantuar (1866)	psig
Meterials of construction	CPVC		
Valves	タイ・7 m 5、0 M m + 1 自当 権のでものは、 - 9 d s -	an Tha an early district the second control	<u> </u>
Type	Ball 12 CE COUNTY		
Manufacturar Model No.	Gr. Or outab	그 그리 보는 중심을 통증하여 하다면 다른	
Materials of construction	CPVG		
Power consumption for this system/subsystem			hp .
	Proposal 1	Proposal 2	
Chemical Feed System		Suifide	
Pump Information			
Quantity	Three (3)		
Manufacturer	Milton Roy or equal		<u> </u>
Type Model No.	Diaphrann		
Maximum capacity	0,7		gph.
Discharge pressure	100	· 医克里特别 医原数医原数	
Hydraulic relief valve setting	100		psig
Materials of construction	PVC liquid end	数 "特殊"的基本的概念。 "我们的知识	
Calibration Columns			<u> </u>
Quantity	One (1)		
Manufacturer			
Model No. Volume, gal	250 ml		
Materials of construction	The state of the s		
	Fig. 50.8 of 5 daily PlaceCollege College Coll	はほりがた ちぎゅう・ スカル ちんけい しゅぎけ さんけいさん	Ī.
	China China Plastic Plastic	Harding a Chroling of green death of white technical worth	
Chemical Injection Quili or Static Mixer Quantity	None -		
Chemical Injection Quili or Static Mixer Quantity Manufacturer	None		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction	None -		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers	Noné		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity	Noné		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer	Nohé One (1)		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity	Nohe		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No.	None (1)		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity	Nohe		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer	None (1)		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No.	None (1) One (1) CPVC		naid
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer And Materials of Construction Recommendation Recommendation Materials of Construction Recommendation Recom	One (1) CPVC Two (2)		psig
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No.	None (1) One (1) CPVC		paig
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction	One (1) CPVC Two (2)		psig
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer	CPVC CPVC Sali GP or equal		paig
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No.	One (1) CPVC Two.(2) CPVC Fall GF. or equal		paig
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction	One (1) CPVC Two (2) CPVC Ball GF. or equal		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No.	One (1) CPVC Two (2) GPVC Ball GF or equal		psig
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem	One (1) CPVC Two (2) CPVC Ball GF. or equal	Proposal 2	
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Chemical Feed System	One (1) CPVC Two (2) GPVC Ball GF or equal		
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem	One (1) CPVC Two (2) GPVC Ball GF or equal	Proposal 3 Polymer	
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Chemical Feed System Pump Information	CPVC Fall GF. or equal CPVC 1/2 Proposal 1 Three.(3) LM/ or equal	Proposal 3 Polymer	
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Chemical Feed System Pump Information Quantity Manufacturer Type	CPVC Two (2): CPVC: Ball GF. or equal CPVC 1/2 Proposal 1 Three (3) LMI or equal SOV drive	Proposal 3 Polymer	
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Chemical Feed System Pump Information Quantity Manufacturer Type Model No.	CPVC Fall GF. or equal CPVC 1/2 Proposal 1 Three (3) LM or equal SOV drive	Proposal 3 Polymer	ihp
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Chemical Feed System Pump Information Quantity Manufacturer Type Model No. Maximum capacity	CPVC Salt GF. or equal CPVC 1/2 Proposal 1 Three (3) LM/or equal SOV drive	Proposal 3 Polymer	ihp gph
Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Chemical Feed System Pump Information Quantity Manufacturer Type Model No.	CPVC Fall GF. or equal CPVC 1/2 Proposal 1 Three (3) LM or equal SOV drive	Proposal 3 Polymer	ihp

Materials of construction	[- 사용 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 :	
Calibration Columns		
Quantity	None	
Manufacturer		
Model No.		
Volume, gal	16. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	
Materials of construction		
Chemical Injection Quili or Static Mixer		
Quantity	None	
Manufacturer		
Materials of construction		
Strainers		
Quantity	Para Charles None and Established	
Manufacturer		
Model No.		
Materials of construction		
Back-Pressure Valves		
Quantity	None .	
Manufacturer		
Model No.		
Relief valve setting		sig
Materials of construction		
Valves		
Туре	Salah Bali Bali Bali Bali Bali Bali Bali Bali	
Manufacturer	GF of equal	
Model No.		
Materials of construction	CENTRAL CPVO CONTRAL CONTRA	
Power consumption for this system/subsystem	其是多是15年至2月至18年的18年的18年,18年2日中的18年的18年的18年18日 In)D

6.4.6 Filter Press Equipment

	Proposal 1	Proposal 2	
Manufacturer	Siemens Water Technologies	过程是另外是特别的对象的	
Type (Belt verse Plate and Frame)	Plate and Frame		
Quantity	Two (2)		
Model number	1200N32-39-50SYHC		
Frame Type (sidebar / overhead)	Sidebar	经国际经济自己的国际。	
Automatic Plate Shifter, yes/no	Yes		\
Light Curtains, yes/no	THE PROPERTY OF THE PROPERTY O	20-拉发。在6000000000000000000000000000000000000	
Total volume	50 cu ft	建位于当约到地的活动	ft ³ /press
Number of piates	40 40 66	主意學是特別物的學言主	1
Design operating pressure	225	THE STREET BY NESS.	psi
Plate size	1200 x 1200		mm
Cake thickness	960 St. Sec. 1845 St. 25 65 A Sec. 160	SELECTION OF THE SECOND	mm
Overall Height	1204	4年/6年/6日本 (1914年) 1914年(1914年)	ft
Overall Width	64 A C C C C C C C C C C C C C C C C C C		ft
Overall Length		ALL CALLS OF STREET	ft
Weight Empty			lbs
Weight Operating			iba
Influent sludge concentration	10 de 2 42 de 16 6 4 25 de 17 de 17 de 17		%
Dry solids load	7,320 bs/day		lb/hr
Belt press sludge throughput rate	N/A		ft3/min
Moisture in sludge cake	70%		%
Density of sludge cake	80		lb/ft3
Filter press filtrate solids	98%		maq
Floor Discharge Opening Required			
Length	[2] [2] [2] [3] [4] [5] [5] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4		ft
Width	58		ft
Optional cake discharge devices		A PRINCE BY LANCY VILLERS & STORY	
Manifold Pipe Materials	Polypropylene lined DI/FRP		
Manifold Valves		3.5.	
Manual - Manufacturer	[2] 10 10 10 10 10 10 10 10 10 10 10 10 10	(1) MESSELE TERRORE TO A TO THE TOTAL	——
Manual - Type		AND STATE OF	
Manual - Material of Construction			
Automatic - Manufacturer	Xomax Bray	Dad with a state of	
Automatic - Type	Plug Butterfly	VERTER SERVE SERVER SER	
Automatic - Material of Construction	Lined/ined	manager to the text of the second come.	
Automatic - Operator Type		Calaber, Visita Mass Stabi	-
Automatic - Operator Manufacturer			
Drip Pan / Bombay Door - Material of Construction	Carbon steel /painted		
Frame - Material of Construction	Carbon steel /painted		
Plate feed style			
Total Cycle time			hrs

Fast FIII			1
Slow Fill			min min
Core Blow	50 10 10 10 10 10 10 10 10 10 10 10 10 10		min
Air Blow			min
Press Dump		N CONTROL OF CONTROL	min
ilter Cloth Material	Polypropylene	的 物理学是是这些传说的多数分别。	
filter cioth weight	9-12 oz	国的发展的企业的企业的	oz./yd
ilter cloth fiber type	Mono/multi or mono		
ilter cloth weave type	Satter	25年中华美国大学和北京学生的	
Filter cloth porosity			scfm/ft ²
Total filtration area	990 Yes		ft ²
Filter cloth weave type			
Aanufacture's service trips	Oncor		daya
Coatings type / dry film thickness		ALTERIAL VIOLETA	mis
Core Blow Air Demand	10 scfm @ 40 ps		cfm/psl
Air Blow Air Demand	100 sofm @ 40 psl		cfm/psi
Belt width	TO SERVICE NAME OF THE PARTY OF	E STREET PROPERTY AND STREET	in
Belt material	STATES STATES AND NUMBER OF STATES		
ligh Pressure Cloth Wash, yes/no	Yes - option		
Skid Mounted, yes/no	Yes		
Skid dimensions, L/W/H	106" x 90" x 44"		ft
Total Skid Weight	2,50Q	[2] [2] [2] [2] [2] [2] [2] [2] [2] [2]	ibs
Total Press Wash Time	1 hour		min
Volume of Service Water consumed per wash		La 1936 Valley Physics Control of the form	gal
Volume of Water Tank Wash System Piping Material of Construction	NASATE NASATE		gai
Cloth Wash Operating Pressure	Julyon	X 10 to 10 T	psi
Skid Mounted Junction Box, yes/no			Pai
Junction Box NEMA Rating			
Junction Box Material of Construction		CONTRACTOR SECTION	
Cloth Wash Valves			
Manual - Manufacturer			
Manual - Type		表 的复数 经 经 经 经 经 经 经 数	
Manual - Material of Construction		20 多数数据 4 数 3 多次数 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Automatic - Manufacturer	Fig-Tek		
Automatic - Type	Ball		
Automatic - Material of Construction	SS	s Had Francisco de Calabara	<u> </u>
Automatic - Operator Type	Spring return rack and pinion		
Automatic - Operator Manufacturer	A SARIES ROS DIBYRES SENSER		
High Pressure Cloth Wash Pump Quantity of Pumps	One (1)		
Pump Manufacturer	Abel		1
Pump Model Number	HP.K-25		
Pump Type	Triplex piston pump	。	
Flow	85	A STATE OF STANDARD STANDS	gpm
Head	1450		psi
Casing Material of Construction	1450 Iron	位 建分类的现在分词 医	
Impeller Material of Construction	N/A		<u> </u>
RPM			
Mechanical Seal Type			
Mechanical Seal Manufacturer			
Fiush/seal water demand per pump, gpm	AND INCIDENCE AN		hp
Horsepower Motor Manufacturar / Model	Signature RC series		1.0
Volts / phase / freq	460/3/60		
Design standards (e.g., NEMA/IEEE, IEC)	NEMA premium efficiency		
Driven equipment maximum brake hp		37 复数的性型的移动物质设计设置。	hp
Motor nameplate			hp
Service factor (NEMA/IEEE motors only)	1.15 See 1.25	(1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	
Motor bearing type			
Motor efficiency at nameplate	95		hp, %
Bearing lubrication system			
			1
	 1 1000 (16) (17) (20) (20) (20) (20) (20) (20) (20) (20		
Space heater rating (watts / voltage / phase)			
Fast Fill Feed Pumps		Mil Mileda (22 Septembria) series e credent de 2005	
Fast Fill Feed Pumps Quantity of Pumps	TWo:(2)		
Fast Fill Feed Pumps Quantity of Pumps Pump Manufacturer	Two (2)	3. 101 EARLE STEED TEED 作	
Fast Fill Feed Pumps Quantity of Pumps Pump Manufacturer Pump Model Number	Two (2) Abel Pumps L.P. HMD-G-21-0256-Gill		
Fast Fill Feed Pumps Quantity of Pumps Pump Manufacturer	Two (2)	3. 101 EARLE STEED TEED 作	gpm

Casing Material of Construction	Cast iron		
Impeller Material of Construction	N/A		
RPM	75 strokes per minute		_
Mechanical Seal Type	TENERS SERVICE NAME OF SERVICE		1
Mechanical Seal Manufacturer	N/A		1
Flush/seal water demand per pump, gpm	e and a second and a second and a		
Horsepower	20	STATE OF THE PARTY	hp
Motor Manufacturer / Model	Siemens RGZEESD		
Volts / phase / freq	460/3/60	学的过去式与过去分词	1
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake hp	18:75 Telephone 18:75	[4] \$4.18(\$1); \$6.50 (\$1); \$6.50 (\$1); \$2.50 (\$1).	hp
Motor nameplate	20	E WOLFE WAS TAKED WAS	hp
Service factor (NEMA/IEEE motors only)	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a logaria de la compansión de la compans	
Motor bearing type	Regressable single shielded.	A PERSONAL PROPERTY AND THE SEA	
Motor efficiency at nameplate	93.5 at full load		hp. %
Bearing lubrication system	Alemits fittings Not supplied		
Space heater rating (watts / voltage / phase)	Not supplied	计数据性通讯系统 多克拉斯福尔	.
Slow Fill Feed Pumps			
Quantity of Pumps	N/A		
Pump Manufacturer			
Pump Model Number	[2] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2	Carried Victoria Continues	
Pump Type			c
Flow			gpm
Head			psi
Casing Material of Construction	[1] F. F. E. S. E. E. E. S. E.		
Impeller Material of Construction			
RPM	· · · · · · · · · · · · · · · · · · ·	1. 1. 连续是不够为了,但是是是是是是	
Mechanical Seal Type		TEST TEST SECTION OF THE SECTION OF	
Mechanical Seal Manufacturer	等可能等。 1911年 - 1911年	"我们是我们的关系是否是我们的	
Flush/seal water demand per pump			gpm
Motor Manufacturer / Model			
Volts / phase / freq	图 其间的影響器 "这种是不是主要的是数。"		
Design standards (e.g., NEMA/IEEE, IEC)	[1] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2	2. 原生的医肾上胱上腺性炎炎	
Driven equipment maximum brake hp		4、	hp
Motor nameplate			hp
Service factor (NEMA/IEEE motors only)	Not 1250 的 12 电影 2015 2015 2015 2015 2015 2015 2015 2015		
Motor bearing type	产业等。1995年1996年1996年1996年	数。这是我们的关系的数,这种是由这种强力 。	
Motor efficiency at nameplate			hp, %
Bearing lubrication system			1
Space heater rating (watts / voltage / phase)		。 [1] 10 10 10 10 10 10 10 10 10 10 10 10 10	
ress Fully Assembled on Shipment yes/no	Yes (except cloth washers)		
uantity of Spatulas Provided	Two (2) per press	。	
Local Control Panels			
Panel size (L x W x H)	36 x 36 x 12		ft and in
Panel approximate weight			lba
Manufacturer	Siemens		1
Programmable Logio Control System			
Manufacturer	AB	1. 2 00. 1999 1. 2012 1. 11	
Model No.	Control Logix		1
Filter Press Platform			
Required (yes/no)	N/A	新以外的原理的基本的原理的	
Platform dimensions, i. x W x H		信 的复数医生物 医皮肤	ft and in
Materials of construction		上 。	1
Structural members not to exceed reaction on floor			ibs

8.4.7 Slurry Pumpa

	Proposal 1	Proposal 3	
Blurry Pump	Clarifler Blowdown Sump 5	Transfer Pumps A, & B & C	
Pump manufacturer	Warmen	是是是是是對於自由語句的	
Model No.			
Туре	Centrifugal	型 发 性化 "我还 <u>"在,是多名字</u> 在"我	
Connections, size, in./flange class			
Suction		是是1965年的第二人的	
Discharge	· 数据的 图形成性的性的现在分词	世間の対象が対象が推進の対象を表現	
Not weights			
Total pump assembly	于"原"。1845年,新加州北北美人的农民产的	和 对第四次和 另一会的 原料 是一会一会	ib
Pump (less motor)	· 图100 (120 年) 1740 (150 日本) 1750 (150 日本)	er kate filme et akklestelden soll.	Ð
Baseplate			ıb
Performance Data			
Rotative speed	· 100 等价的多数多数多数多数多数		rpm
Tip speed			Noc
Direction of rotation available as viewed from the input shaft	rade out the case and choose it		

Cepenty at design conditions Total head at design conditions, relative to pump shaft Total head at design conditions, relative to pump shaft RIPSH required at design conditions St. Representative at design conditions St. Representative at design conditions St. Representative at design conditions St. Representative at design conditions Responsed at design conditions Machinum scolidations Machinum scolidations Machinum scolidations Machinum scolidations Responsed and another conditions Responsed and another conditions Responsed and another conditions from Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed and another conditions Responsed another conditio	Guaranteed performance			
Total head at design conditions. IP69H required as purpose an apase. IP69M requirements. IP69M requirements. IP69M requirements. IP69M resident and imformation and im69M requirements. IP69M resident and imformation and im69M requirement occurs. IP69M resident and imformation continuous flow. IP69M resident resident continuous flow. IP69M resident resident resident flow. IP69M resident resident resident flow. IP60M resident resident resident f		105		apm
INPSH required at design conditions, relative to pump sheft Pamp efficiency at design conditions State Maximum and alkar pump can pass Maximum and alkar pump can pass Maximum and alkar pump can pass Maximum and alkar pump can pass Maximum and alkar pump can pass Maximum and alkar pump can pass Alkarimum and can pass Alkarimum and can pass Alkarimum and can pass Alkarimum and can pass Alkarimum and can pass Recommended minimum power requirement occurs Impaire diagnostic diagnost				
Pump efficiency at design conditions 5, 1				
Magfrum solid size pump can pass In Magfrum solid size pump can pass In Magfrum solid size pump can pass In Magfrum solid so				
Medimum shutoff head ft				
Power requirements				
At shudring Maximum How How Maximum How How Maximum How How Maximum How Maximum How Maximum How Maximum How Maximum How How Maximum How How How How How How How How How How			The state of the state of	
At shutoff Madmum How Madmum power requirement occurs How madmum power requirement occurs Recommended minimum continuous flow Recommended minimum continuous flow Recommended minimum continuous flow Recommended minimum continuous flow Recommended minimum continuous flow Recommended minimum continuous flow Recommended madmum continuous flow Recommended madmum continuous flow Recommended madmum continuous flow Resil intection water custility requirements Impalier diseases Impalier selection Impalier selection Recommended selection Recommended selection Recommended selection Recommended selection Recommended selection Recommended shart sease(s) Type of bearings Recommended shart sease(s) Type of bearings Recommended shart sease(s) Recommended shart sease(shart sease(s)—————————————————————————————————————		Fig. 1 g lawy literates are designed	hp
Medinium Description Descr				hp
Flow rate at which maximum power requirement occurs Recommended minimum continuous flow Recommended minimum continuous flow Recommended minimum continuous flow Recommended minimum continuous flow Real water cooling water flow required by pressure required Real injection water quality requirements Impalier disasters Design Maximum available Minimum available Minimum available Minimum available Minimum available Recommended Casing flore Riubber Shaft Impalier disasters Riubber Riubbe		LEURING OF VEHICLES ASSESSED.		hp
Recommended minimum continuous flow Recommended maximum continuous flow Recommended maximum continuous flow Recommended maximum continuous flow Recommended maximum continuous flow Real injection water quality requirements Impaler diameters Design Maximum available Minimum available Minimum available Minimum available Minimum available Rubber Shaft Rubber Shaft Impaler Casing Casing iner Shaft Rubber Shaft Impaler Rubber Rhatel sleeves Impaler watering rings Casing iner Shaft sleeves Impaler Dit ribber lines Rhatel sleeves Impaler Radial Tryps of bersing rings Radial Tryps of bersing rings Radial Tryps of bersing shaft seaks) Type of bersing shaft seaks Maximum shaft seal Manufacturer Model No. Shaft diameter Al bearing location(e) Silever outer clameter Coupling Maminfacturer Model No. Rates power, inplanytoe factor Other Data List of special soots that will be furnished Skid maximater Maximum shaft seal Manufacturer Model No. Rates power, inplanytoe factor Other Data List of special soots that will be furnished Skid maximater Pump manufacturer Model No. Rates power, inplanytoe factor Other Data List of special soots that will be furnished Normal Field seembly work required Directions of relation available as viewed from the input shaft and of the pump (Colockwise or Counterclockwise) Discharge Recommended and sealing conditions, relative to pump shaft center line Trial seal selegan conditions Roselier in the standard of the pump shaft center line Trial seal selegan conditions In the Roselier Roselier in the standard of the pump shaft center line Trial seal as design conditions In the Roselier Roselier in the standard of the pump shaft center line Trial seal as design conditions In the Roselier Roselier in the standard of the pump shaft center line Trial seal as design conditions prelative to pump shaft center line Trial research and the standard of the pump shaft center line Trial research and the standard of the pump shaft center line Trial research and the standard of the pump shaft center line Trial researc			THE RESERVE OF THE PARTY OF THE	
Recommended maximum continuous flow Seal where concling water flow required a pressure required Seal infection water quality requirements Impaler disperses Design Maximum evaliable Minimum evaliable Minimum evaliable Minimum evaliable Minimum evaliable Casing Casing finer Rubber Shaft Impaler Casing finer Rubber Shaft sleeves Impaler watering rings Accasing wearing		THE PROPERTY OF THE PARTY OF TH		
Seal evident cooling water flow required pressure required Seal niction water quality requirements Impaler diameters		2015 100 100 X (2017 15 J. 2018 15 20 5)		
Seel injection water quality requirements Impalier diseases in Incident water and a seed of the seed o				gpm & psi
Impeler diameters In. Maximum available In. Minimum available In. Minimum available In.			Unid Bally to I with the Land Land	
Design Maximum available Minimum available Minimum available Minimum available Caeing Caeing OI Caeing Caeing OI Caeing Iner Sheft Rubber Sheft Impeller Di rubber lihad Sheft sleeves Impeller versing rings Caeing wearing rings Caeing wearing rings Caeing wearing rings Maximum available versing rings Caeing wearing rings Maximum available Thrust Description of bearing lubrication system and recommended Thrust Description of bearing lubrication system and recommended Maximum available Manufacturer Model No. Sheft diameter Model No. Sheft diameter Model No. Sheft diameter Model No. Rafted power, hp/service factor Other Data Lut of special tools that will be furnished Skid mounted: Field assembly work required Skid mounted: Field assembly work required Direct Drive or V-bett Drive Proposal 1 Proposal 1 Proposal 1 Proposal 1 Proposal 2 Proposal 3 Proposal 3 Proposal 4 Proposal 4 Proposal 5 Proposal 5 Proposal 5 Proposal 6 Proposal 6 Proposal 7 Proposal 7 Proposal 7 Proposal 7 Proposal 8 Reservator Clarifler Bludge Pumps A, B, C, B, D Pump manufacturer Model No. Discription of rotation available as viewed from the input sheft Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate Total pump assembly Pump (Bes motor) Basepiate as viewed from the input sheft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Capacity at design conditions, relative to pump sheft center line Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total pump assembly Total				
Maintena available Minimum available Minimum available Minimum available Minimum available Casing Casing Casing Rubber Rubber Shaft Impalier Shaft S		PODD TO SEA OF REAL OF THE AND THE	ARROLDA BURGA SPONICANA STAL	in.
Minimum available (n. Materiable Casing (D. Casing Iller Rubber Shart Casing Iller Rubber Shart Impeller Dirubbar Ihad (D. Casing Iller Rubber Shart Impeller Dirubbar Ihad (D. Casing wearing rings (D. Casing wearing		N. Stori Actor Control of the Contro		
Materials Casing (iner Casing liner Rubber Shaft Impaler Di rubber ined Shaft sieeves Impaler Shaft sieeves Impaler Shaft sieeves Impaler Shaft sieeves Impaler Shaft sieeves Impaler Shaft sieeves Impaler Shaft sieeves Impaler Shaft sieeves Impaler Impaler Shaft sieeves Impaler Impaler Shaft sieeves Impaler Impaler Shaft sieeves Impaler Radial Trust Description of bearing lubrication system and recommended Impaler Impaler Manufacturer Model No. Shaft diameter At bearing location(s) At seal coaton(s) At seal coaton(s) In. Sieeve, outer diameter Coupling Menufacturer Model No. Rated power, hp/service factor Other Otate List of special tools that will be furnished Field assembly work required Direct Drive or V-bett Drive Proposal 1 Proposal 1 Proposal 3 Proposal 3 Proposal 3 Proposal 3 Proposal 3 Rotative seed In old power, passembly Non Type Rotative size in Janes Sacrative Non Size of the size o		เหมือนไทย การสิงเกลียน (เมื่อเกลย นักสิงเกลย เพลยน์ เกม	Brain (Pentingles), a teleproximate	in.
Casing liter Sheft Casing liter Rubberr Sheft Impeller Sheft sleeves Impeller Di rubber lined Sheft sleeves Impeller Sheft sleeves Impeller Wearing rings Mechanical sheft seek(a) Type of bearing lubrication system and recommended Manufacturer Radial Thrust Desoription of bearing lubrication system and recommended Manufacturer Model No. Sheft diameter At bearing location(a) At seal location(b) Sheeve, outer diameter Cocupling Manufacturer Model No. Rated power, injeervice factor Other Data Ust of special tools thet will be furnished Direct Drive or V-bett Drive Proposal 1 Propo				
Casing liner Sheft Impeller Sheft sleeves (mpeller wearing rings Casing wearing rings Casing wearing rings Mechanical sheft seet(a) Type of bearings Radial Thrust Desortipion of bearing lubrication system and recommended Mechanical sheft seet Manufacturer Model No. Sheft diameter At bearing location(a) At seet location(b) Sieve, outer diameter Coupling Manufacturer Model No. Reited power, hightervice factor Other Data User of special tools that will be furnished Pield assembly work required Direct Drive or V-bett Drive Proposed 1 Proposed 2 Proposed 2 Proposed 2 Proposed 2 Proposed 3 Proposed 2 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 3 Proposed 4 Pr		The second of pice the second of		
Impeller Dirubber times Dirubber times		Rubbar	a de mar de la grava par en apparent	
Impeller Sheft sleeves Sheft			BANCEN, COMMANDAL BANCESSEY	
Shaft sleeves Impeller wearing rings Casing wearing rings Mechanical shaft seal(s) Type of bearings Radial Thrust Description of bearing lubrication system and recommended Mechanical shaft seal Meanufacturer Medel No. Proposal 1 Pr		DI rubber lined	3.51-51.503.253.53.73.73.254.79	
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Total head at design conditions NPSH required at design conditions, relative to pump shaft center line	Capacity at design conditions	· · · · · · · · · · · · · · · · · · ·		gpm
NPSH required at design conditions, relative to pump shaft center line	Total head at design conditions			ft
center line ft				
	center line			
Pump emojency at design conditions [PATE Pate P	Pump efficiency at design conditions			%

Maximum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff			în ft
Power requirements At design conditions			π
At design conditions			
At shutoff			hp
			hp
Meximum			hp
Flow rate at which maximum power requirement occurs			gpm
Recommended minimum continuous flow		THE REST OF STREET, ST	gpm
		2-28, 2 to "4-35, 35, 14, 1 139, 191 30, 1	
Recommended maximum continuous flow	The second of the first of the second of the		gpm
			gom & pai
Seal injection water quality requirements			
Impeller diameters			
Design	11、110、10、10、10、10、10、10、10、10、10、10、10、		in.
Maximum available		Not the control of the same of the control of the c	in.
Minimum available		MANGEORE CRANCE CENTER IN TERRESTOR	In
	51. 144. 150. 31.8 server 1 20. 14. 1. 12. 44. 17. 14.	File par Sear, the St. As and . Not all particles and the parties of selection	<i>""</i>
Materials	New teach to the angle of the same of the transition of the last of the first of the same	NO SE PERS PER LOS DE PORTERS SER LA CO	
Casing		AND SECTION OF THE SEASONS OF	
Casing liner		多次的 大家 医中肾管 医多种抗性病	
Shaft	多等和自然的企作。但是是自然的问题的。	A TORNING AND A SANCE OF	
impeller	网络克里克克里克里克克 经分类 经工作的		
Shaft sleeves			"
Impeller wearing rings			
Chains months time			
Casing wearing rings	na makangkan pangkan kan dan dan bangkan kangkan belanda. Dan bangka dan bangkan		
	整理的证明,有一个企业工程的证明的证明的证明。		
Type of bearings	: 		
Radial	"经国际工程"等。12年代教授等于1948年代	图1200年代中国第二次的国际	ļ
Thrust		是不是正式的"加"的"一"的"是一	
Description of bearing lubrication system and recommended	医克雷克氏试验检 医二氏性神经炎	基式完整化学是由完整证明	
lubricant	医动脉中的皮肤上的可能发酵		
Mechanical shaft seal	<u></u>	The state of the s	
Manufacturer	套。到了APPA的一个许是是不是一种的	Albert Carles and a William Control	
Model No.	They has play as the requirement of the	Balantieren unt ausgebieren erman.	<u> </u>
Shaft diameter			
At bearing location(s)			in.
At seal location(s)	(2) 10 mm (2) 1	\$P\$中国 12.10克克 (12.10克克克克克克克克克克克克克克克克克克克克克克克克克克克克克克克克克克克	in.
Sleeve, outer diameter	美加工的的工程等以外的工程的的,可以对数	[2012年] 水本 [[2012年KD] 李 [[201	in.
Coupling			'
Manufacturer	X 1000 000 1000 000 1000 1000 1000 1000	a Ponganus Ropadora dingari	
		WELFARM TO THE SECOND STATE OF THE SECOND STAT	
Model No.	A 76 COLUMN TO THE THE COLUMN TO THE THE COLUMN TO THE COL		
Rated power, hp/service factor	Received Activities and the control of the control	Galacter in project and appropriate the control of the	
Other Data			ļ
List of special tools that will be furnished	elaterate vitalization acceptant		
Fleid assembly work required		The transfer of the second of the second	
Direct Orive or V-beit Drive		Karra i sak a kila disabasa bila di kila di	
	Proposal 1	Proposal-2	
Siurry Pump	Filter Press Feed		1
	terra viscous cas cas cas cas as a section of the	Razenet et et en esta autoria de la composito	
Pump manufacturer	See 6.4.8		
Model No.			
Туре	The Body & State of Section and the	建设设施设施的 医克斯特斯	
Connections, size, in./fiange class			
Suction	Control of the Contro	的现在分词	
Discharge			
Net weights			
Total pump assambly			lb
		Serie at an also respectively described with	lb
Pump (less motor)			
Baseplate	 September 1988 - 1981 September 1985 S	18 19 19 19 19 19 19 19	III
Performance Data		lest we frequency with the application and the application	
Rotative speed	亚斯达克斯莱尔斯特克克斯特斯斯 克		rpm
Tip speed	点是"你是是是是这些的的是 是是是		ft/sec
Direction of rotation available as viewed from the input shaft			
and of the pump (Clockwise or Counterclockwise or	等。但是对于"新"是为了的关键的		
Clockwise and counterclockwise)	是其中,但是不是是一种的人的是不是		
Guaranteed performance	and the second s		
			apm
Capacity at design conditions			ft
Total head at design conditions			114
NPSH required at design conditions, relative to pump shaft			
center line		是现在的特别的 医皮肤神经炎 经营业	ft
Pump efficiency at design conditions			%
Maximum solid size pump can pass			ín
Maximum sout size party can pass			ft
	the state of the s	The state of the s	
Power requirements	eta nga anga taong ang kabang matang at ang ang ang kabang a	Representation and applications of the	hn
At design conditions	世紀 4.5 · [1] · [1	 In the province of the province o	hp

At shutoff			hp
Maximum			hp
Flow rate at which maximum power requirement occurs			gpm
Recommended minimum continuous flow			gpm
Recommended maximum continuous flow			дрп
Seal water cooling water flow required & pressure required	日本日本企業日本本共和國共產黨		gpm & psi
Seal Injection water quality requirements		Kirker translation	Month of par
Impeller diameters		<u> </u>	
- Design		表的正式的基本上是多数的基础的基础的	in.
Maximum available	是是,但是是一个的特殊。不是在一个的人是		in.
Minimum available		From the continue the second	in.
Materials			
Casing			
~ Casing liner	SECTION OF STREET	Average recommendation	
Shaft	是2000年已经会选出。2010年1月2日中的中央社会	新老公司的基本公司的	
impeller		SUPERIOR PERSONS ASSESSED.	
Shaft sleeves	\$45.00% (A) (A) (A) (A) (A) (A) (A) (A) (A) (A)		
Impeller wearing rings	[2] 并不是影響等對性數學分類的是特別等等更多	TO SERVICE TO SERVE	
Casing wearing rings	以序17. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	ENGLISH LENGTH STATE	
Mechanical shaft seal(s)	在1990年1月19日,1997年1月19日 3日		
Type of bearings			
Radiai		Aren de 1900, a bizonaria	
Thrust	है। जो सम्बद्ध की पाणकी करने हैं कि पहले हैं हैंड		
Description of bearing lubrication system and recommended lubricant			
Mechanical shaft seal	A Company of the American Section of the Section of	A Company of the Control of the Cont	
Manufacturer		April 1980 - Propinsi Santa (1980)	
Model No.			
Shaft diameter			
At bearing location(s)	医阴茎畸形 经实现 医皮肤皮肤	以 是原因工工工程是是对于发展工程	in.
At seal location(s)			in.
Sleeve, outer diameter			in.
Coupling			
Manufacturer	会計第2479。計算計算的基準的計算的	第四年,李顺家是邓明的李明。	
Model No.			
Rated power, hp/service factor		建筑设置设施。建立建筑和	
Other Data		理0是6日1日出版的18年第18年第18年2月1日	
List of special tools that will be furnished		\$P\$100000000000000000000000000000000000	
Field assembly work required	世界的主义的《社会》的《社会》的是一个社会的主义的。 第二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十	医学生 医多种性 医生生性	
Direct Drive or V-belt Orive	English Control of Control of Control	等的"音乐"的"文化"的"文化"的"文化"。 第一章	

6.4.8 Vertical Pumps

	Proposal 1	Proposal 3	
Pump	Filter Backwash	Pumps A & B	
Manufacturer	A CONTRACTOR OF THE SECOND		1
Model No.	思见。可能是最多生物的时间。这种 对 是	是的概念。其实是特別工作宣傳和	1
Type (turbine, sump, etc.)		A CHEST BUILDING	
Number of stages, each pump		14位于1906年1月1日本本的政策上100	
Discharge connection size/flange class		域。阿尔特特的特别的不识证。	ln
Net weight, each	等。1987年2月4日第四日的1日第	建筑等级的。这层地区域区	lb
Pump			lb
Motor	in crave of one and subsequen	1000年1月2日日本公司 25-30年2月1日日本	lb
Total, pump including motor, baseplate, and coupling		endigias organization in the contraction of the con	lb
Performance Data			
Rotative speed		the sale of the late of a safeth	грт
Minimum distance required from bottom of suction bell to bottom of pit, ft			
Recommended minimum continuous flow (recirculation), each pump			gpm
Guaranteed performance (each pump)			gpm
Capacity at design conditions	国际中国国际发展的		gpm
Total head at design conditions, including head losses through the pump			ft. H₂O
Submergence required at design conditions (from water surface to bottom of suction belt)			in
Required NPSH, relative to pump inlet suction bell at design conditions			ft H ₂ O
Pump efficiency at design conditions	图片 医自己性性病 医皮肤皮肤皮肤皮肤皮肤	RESERVED AS A PROPERTY OF THE	%
Motor efficiency at design conditions			%
Maximum shutoff head		gati selegian syulyu yakwasa	ft H ₂ O
Power requirements	A CONTRACTOR OF THE CONTRACTOR	1 Sec. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•
At design conditions	 Property and the property of the		hp

At shutoff			Te
Maximum			hp
Pump Construction			hp
Impeller diameters			
Design		The property of the control of the c	ļ
Maximum available			lin.
Minimum available	्रिकेट के तो के प्रतितिक्षण के प्रतिकृतिक के विकास के प्रतिकृतिक के किस्सी के प्रतिकृतिक के प्रतिकृतिक के		lin.
Materials	्री संस्तर प्रदेश । या , श्रमीवित्र प्रोस्कृत है जिस्सानीम और व	的新疆。1945年,2015年3月,12日 1943年3月 1955年	lin.
Column		Aprile that serve the language for the leg-	1
Discharge head		Berger Commencer and the second secon	<u> </u>
Bowis, volutes, and diffusers	and the state of t	KBUS E SEKAT MA ESANAGE SES	
ShaftShaft		Pages of a Comment State State	1
Impeller		Classification of the contract	
Impeller wearing ring			
Casing wearing ring		S1012612 40 - 11 11 11 12 13 15 (
Shaft sieeves			1
Suction bell			1
Suction strainer	CONTRACTOR SPECIAL CONTRACTOR		
Shaft diameter			i=
Length of sections	ELS TOTAL TOTAL AND STATE OF THE		
Length from baseplate to bottom of suction bell			III.
Line shaft bearings		pampo se de protesta de la composição por la composição de la composição d	и1.
Type	The State of the Control of the Cont	Linguista a software management of the second	
Number		PARTICULAR CANADA CANADA CANADA CANADA CANADA CANADA CANADA CANADA CANADA CANADA CANADA CANADA CANADA CANADA C	
Length	Table 2011年中央 1980年 198		<u> </u>
Material		建铁铁铁铁铁铁铁铁铁铁铁铁铁	
Bowl bearings			
Туре	The Property of the second		
Number	的自己是可以的对象的。由于对于中	美国的自由的国际中心的第三人称单数	'
Length		特别和阿尔克 图形 中国特别的	
Material	新 2000年 (A. 1980年) 新 (A. 1980年) 新 (A. 1980年)		1
Description of line shaft bearing lubrication system, including		POSTA CONTROL PROVINCE	
required quantity of externally supplied bearing lubrication			İ
water, if applicable	国主义对抗的大型人员的		
Description of bowl bearing lubrication system, including			
required quantity of externally supplied bearing lubrication			ł
water, if applicable	[1] [1] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4		1
Description of shaft seals, including required quantity of		Committee of the commit	
externally supplied seal water, if applicable	化学运行的主义特别的政		
Motor Data	The second was been about the second second to the second	entrak programma da particulação	
Manufacturer	。 《日本日本名·日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本	September 201 of the American	
Enclosure		A Secretary of the Control of the Co	
Horsepower at design conditions			hp
Service factor	是"自己的"。		
Voltage/Phase/RPM			
Miscellaneous Data			
Shipping weight (each pump assembly if more than one)		是是於,其他是自己的主义的是一种是一种,但是一种的	lb
	Proposal 1	Proposal 2	
Pump	Effluent Pum		
Manufacturer	Fybrec		
Model No.	5500		
Type (turbine, sump, etc.)	Sump		
Number of stages, each pump	全有重要分類。例如建筑化文学的	. 李俊师数: 20年 (B. 1948年) 表示。	
Discharge connection size/flange class	31/150 lb	Control of the control of the state of the s	In
Net weight, each			lb
Pump	PER MINISTER PROPERTY AND A DESCRIPTION OF STREET		lb
Motor			ib
Total, pump including motor, baseplate, and coupling			ib
Performance Data	The second secon	The same of the sa	
Rotative speed		ABORIA DE DESCRIPCIÓN DE PERSONA	rpm
Minimum distance required from bottom of suction bell to			трии
bottom of pit, ft	图:"不是是我们的是是是是是一个	的對於學科學學可能的主義	
Recommended minimum continuous flow (recirculation).	gradiska – e slovenska gleska agom un frægs (f. 1982) 1900 f. og fra Bradisk fra Merke de stekskalding fra Merke	カルの内はは、100 の変化し、1900年代第四日ではは、2000 数1億円数元付出はは10回場を2000年代である。1907年代	
	的方式是大型的特色。	38 。60 是第一至2007年的新	
each pump	la sakor torija polikoja logalija. Požšišalija Delivija 1919. gradina polikoja izveto predikta poli	ORNAN A TILLE IN A TILLET TO THE TANK A TILLET TO T	gpm
Guaranteed performance (each pump)			gpm
Capacity at design conditions Total based at design conditions including based lesson	230		apm
Total head at design conditions, including head losses			
through the pump	2000年的基本共和國共產黨等		ft. H₂O
Submergence required at design conditions (from water			
surface to bottom of suction bell)	是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个		ln
Required NPSH, relative to pump inlet suction bell at			
design conditions	2007年1月1日日本日本大学、古典社工		ft H₂O

Pump efficiency at design conditions	57. Sec. 1997 (1997)	: 1%
Motor efficiency at design conditions	124-2	%
Meximum shutoff head	124.2	ft H₂O
Power requirements		
At design conditions		hp
At shutoff Meximum		hp hp
Pump Construction		IOP
impeller diameters		1
Design		
Maximum available	医克里氏性 医乳腺性胆管 医胆囊性 医皮肤性 医皮肤性	in.
Minimum available		in.
Materials	tari da da mana mana mana mana mana mana man	
Column Discharge head	FRP	
Bowls, volutes, and diffusers		
Shaft		1
Impelier	는 1000 전 100 전 10 FRE 12 12 12 12 12 12 12 12 12 12 12 12 12	91
impeller wearing ring	[[마음하다 아들 등요하는 요요하다 이 경찰하다] [[[마음하하는 학교 [환경 환경하다]] 아이트라는 사람이라고 보다였다.	69
Casing wearing ring		
Shaft sleeves		4
Suction bell Suction strainer		an an
Shaft diameter		in:
Length of sections		
Length from baseplate to bottom of suction bell		· In.
Une shaft bearings		
Туре		
Number		4
Length		Š.
Bowl bearings		
Туре	表表示。 第二章	
Number		. Ži
Length		
Material		sis- ta
Description of line shaft bearing lubrication system, including required quantity of externally supplied bearing lubrication		
water, if applicable		
Description of bowl bearing lubrication system, including		
required quantity of externally supplied bearing subrication		5
water, if applicable		*:
Description of shaft seals, including required quantity of		Š.
externally supplied seal water, if applicable Motor Data	CONTROL OF THE SECOND S	
Manufacturer		î
Enclosure	TEF©	ir i
Horsepower at design conditions		hp
Service factor	1.15 480/3/1800	fol ver
Voltage/Phase/RPM	460/3/1600	74. Vis
Miscellaneous Data Shipping weight (each pump assembly if more than one)		lb
Stipping weight (add: pump assumer) in those train shoy	Proposal 1 Proposal 2	
oump	Dirty Backwash Sump Pumps A & B	
Manufacturer	Pybroc	1.5
Model No.	5500	validador de la composição de la composi
Type (turbine, sump, etc.)	Sump	(C)
Number of stages, each pump Discharge connection size/flange class	1.5"/150.16	in in
Net weight, each	3-4-1-0.ID	ib .
Pump		lb
Motor		lb
Total, pump including motor, baseplate, and coupling		lb
Performance Data		S rate
Rotative speed Minimum distance required from bottom of suction bell to	************************************	<u>्राष्ट्रा</u> े :
Minimum distance required from bottom or suction bell to bottom of pit, it		
Recommended minimum continuous flow (recirculation),		gom
Guaranteed performance (each pump)		o gpm
Capacity at design conditions		gpm
Total head at design conditions, including head losses		n H-O
through the pump	Letter betreet the beginning the section of the contract of the state of the section of the sect	it. H ₂ O

Submergence required at design conditions (from water			T
surface to bottom of suction bell) Required NPSH, relative to pump inlet suction bell at			ln
design conditions			ft H ₂ O
Pump efficiency at design conditions	42.7	March of the state	%
Motor efficiency at design conditions			%
Maximum shutoff head	ASSET THE PERSON NAMED	发现了一次,这种识别。这个对于	ft H₂O
Power requirements	Marine Control Marine (Marine) Control of National Control	But William Control of the Control o	ļ
At design conditions At shutoff			hp
Maximum			hp hp
Pump Construction			1.12
Impeller diameters			
Design			
Maximum available			
Minimum available Materials			in.
Column	FRP/		
Discharge head	FRP		1
Bowls, volutes, and diffusers	Fair and the comment of the comment of		
Shaft	FRP	全等人的智慧的是不可能的基础的	
Impelier	FRE		
Impelier wearing ring			
Casing wearing ring Shaft sleeves			
Suction bell			
Suction strainer	Marine Report Regularity and the		<u> </u>
Shaft diameter			ín.
Length of sections	[2] ELECTION EXCEPTION EXCEPTION		ln.
Length from baseplate to bottom of suction bell			In.
Line shaft bearings	Total Control (1997)	Local Converse Conference West Conservation of the	
Type Number			-
Length			
Material		COLLY LOCKS BY SERVICE PO	
Bowl bearings			
Туре	C. Prince of the latter of the		
Number			ļ <u></u>
Length Material			
Description of line shaft bearing lubrication system, including			
required quantity of externally supplied bearing lubrication			
water, if applicable			
Description of bowl bearing lubrication system, including			
required quantity of externally supplied bearing lubrication			}
water, if applicable Description of shaft seals, including required quantity of		kielista ja karita karita karita karita karita karita karita karita karita karita karita karita karita karita Karita karita	
externally supplied seal water, if applicable		美色的主要有情况的	
Motor Data		The state of the State Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the Office of the	
Manufacturer		斯·拉斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯斯	
Enclosure		2014年,1750年以前,1918年- 2 87	
Horsepower at design conditions	7.6		hp
Service factor Voltage/Phase/RPM	1.15 460/3/1800		
Voltage/Phase/RPM Miscellaneous Data	490/3/1900		
Shipping weight (each pump assembly if more than one)			lb
	Proposel 1	Proposal 2	
ump	Filtrate Sump P	umps A & B	
Manufacturer	See 6.4.8, Dirty Backwash	AND AND THE PARTY OF THE PROPERTY.	
Model No.	Sump Pumps		
Type (turbine, sump, etc.) Number of stages, each pump		Park alignment of the control of the	
TOTAL OF ANTARON CONT. NOTED			in
	Property and the second of the second of the second		
Discharge connection size/flange class			Ь
Discharge connection size/flange class Net weight, each Pump			lb
Discharge connection size/flange class Net weight, each Pump Motor			lb lb
Discharge connection size/flange class Net weight, each Pump Motor Total, pump including motor, baseplate, and coupling			lb
Discharge connection size/flange class Net weight, each: Pump Motor Total, pump including motor, baseplate, and coupling Performance Data			ib lb lb
Discharge connection size/flange class Net weight, each Pump Motor Total, pump including motor, baseplate, and coupling			lb lb

Recommended minimum continuous flow (recirculation),			1
each pump			gpm
Guaranteed performance (each pump)			gpm
Capacity at design conditions Total head at design conditions, including head losses			gpm
through the pump			ft. H ₂ O
Submergence required at design conditions (from water	ind in the control of the second of the seco	Market and State of State of the State of State	In LAG
surface to bottom of suction bell)			
Required NPSH, relative to pump inlet suction bell at			în
design conditions			ft H₂O
Pump efficiency at design conditions	なる。本語の古典など、東方がの	a sanda santa 2000 dan dan dan dan da	%
Motor efficiency at design conditions		ELECTRONICO DE LA PERTANDA CARRA DE	%
Maximum shutoff head		SERVED FOR SEXUE SEXUE STATE	ft H ₂ O
Power requirements		Processing the second s	
At design conditions		figurate survey encountry	ha
At shutoff		ETTATA PER MANAGERY	hp
Maximum	· 中国中国 医中国统治的 (11.00年度) (2.000)		hp
Pump Construction			T
mpeller diameters			
Design	r deposit falle deposit	发展的影影的发展的影响	in.
Maximum available		建设的工作的设计设计设计 。包括1860年代	ln.
eldskava muminiM	表现的,我们是对外的对象的对象的对象的对象	With the control was a second of the special	in.
Materials			
Column	AREA TO DE DE 18 TO CARLES		
Bowls, volutes, and diffusers			
		建设设施设施的基础 。	
Impeller		SAGE STEVE	
Impeller wearing ring			
Casing wearing ring Shaft sleeves			
Suction strainer			
Shaft diameter		green was specificated and a second control of the second control	
Length of sections		and the second s	in.
Length from baseplate to bottom of suction ball			In.
ine shaft bearings		dental entitle manifest (see File particulations)	A1.
		GRANT TERMINATED AND A STATE OF	
	PROPERTY OF THE PROPERTY OF		
Length			
Bowl bearings		-	•
Туре			
Number			
Lengin	医电子系统 化双原用 化自己基本单位 美国克尔特的国		
Material	经过程的支撑。	建筑外的中央区域中 有	
Description of line shaft bearing lubrication system, including		LEAN TO SEE TO SOLD	
equired quantity of externally supplied bearing lubrication			
vater, if applicable		Garago da de la composição de la composi	
Description of bowl bearing lubrication system, including	5种种类型,对由种类型。	对现象的情况是因为"	
equired quantity of externally supplied bearing lubrication			
vater, if applicable	an such a february say no near the first	on the second of the second	
Description of shaft seals, including required quantity of		划在1980年度1987年 度	
externally supplied seal water, if applicable			
Notor Data	and the best of the control of the c		
Manufacturer			
Enclosure			
Horsepower at design conditions			hp
		了一个大学的一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	
Service factor Voltage/Phase/PPM			
Voltage/Phase/RPM			

6.4.9 Local Control Panels

	Proposal 1	Proposal 2
Panel description	为ULL型品等的特殊等的转换。这个型品等的	
Panel size (L by W by H)		t t
Panel approximate weight	经过的基本证明,但是实现是是是特别的	Cobject Color Professor (b
Manufacturer		排出"多"、"大学者等的"Para Elisan"。1995年

8.4.10 Master - Programmable Logic Control System

	Proposal 1	Proposal 2
Manufacturer		
Model No.		
Dimensions (overall, L x W x H)	사람들이 사람들이 가고 없었다면서	・ 関連的は、自己は多数である。 ・ 対象的は、自己は多数である。 ・ 対象的は、自己は多数である。 ・ 対象的は、自己は多数である。 ・ 対象的は、自己は多数である。 ・ 対象のは、自己は多数である。 ・ 対象のは、自己は多なである。 ・ 対象のは もことはる。 ・ 対象のは、 ・ 対象のな。 ・ 対象のは、 ・ が。 ・ は、 ・ が、 ・ は、 ・ が、 ・ は、 ・ が、 ・ は、 ・ は と は も は も は も は も は も は も は も は も は
Weight		

8.4.11 Shop Fabricated Tanks

	Proposal 1	Proposel-2
Tank name	Sulfurio Aoid	Storage Tank
Shell material	N/ASSA TELESCO	(1) 基础 表现情况,从数据自由企业是否的。a
Plate thickness		
Shell	THE STATE OF SHIPS OF THE STATES OF	i vitalia programa de la composició de la lin.
Head or bottom	1. 40. 10. 10. 10. 10. 10. 10. 10. 10. 10. 1	r i stration and the second in.
Head or top		数据的表现在是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个
Dry weight, each		te lead to the second of the lib
Gasket material		
Describe the amount of field erection work required		
Vent Dryer		
Manufacturer		。 表於自然學是在具體學是一個語言。
Model Number		· · · · · · · · · · · · · · · · · · ·
Overflow Check Valve		
Manufacturer	是位置的 经 证据的 经基础的 经基础的 经基础	
Model Number	· · · · · · · · · · · · · · · · · · ·	1. 表层等图式增加各种证明的表层的设置

8.4.12 Fibergiass Reinforced Plastic Tanks

	Proposal 1	Proposel-2	
Tank Tank	Desaturation *	l'anks A & B	
Manufacturer	Augusta, Ershigs or equal	· 왕조 발생회 (10년 원)의 성조되었다고 말했다.	1
Tank type (open vs. closed top)	Open.	克里克马里克尼斯斯斯 医乳腺	
Tank residence time (if applicable)	- 1. 民人の本では、 64 数数を1.377を発生		min
Tank materials			
Resin			4
Glass			
Surfacing mat		电影性的现在分词形式的现在分词形	
Chopped strand mat	实的现在分词是是现代的最大。	· 通知的事件。但是自由,是100年的100年	
Continuous roving			
Veli		Mark of Mark Services	
Cure		150.151.751.751.751.751.751.751.751.751.751	
Post cure			
Material thickness			
Top head		1 (李) 后,他们还有关的特别。(4)(2)	
Wall at top	发展的特别的影響等的影響的影響		ln.
Wall at bottom		\$ 752 A S A S A S A S A S A S A S A S A S A	ln.
Tank bottom			in.
Insulation		· 图 10 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
inside diameter	5 10 ± 10 ± 10 ± 10 ± 10 ± 10 ± 10 ± 10		ft. and in.
Straight side length	11 1 1 1 2 23 23 2 2 2 2 2 2 2 2 2 2 2 2		ft. and in.
Effective volume	12,331	。 新型音音音·数學學數學是於	gal
Weight			
Empty	· 1914年1月1日 - 1914年1月1日 - 1914年1日 -		lb
Flooded	· 公司 158 等名號 金品交流的工具都計画	[[2]] [[2]]	lb
Shipping		Manager System Control of the	lb
Selsmic moment	ই ভাইৰজন হ'ব জন কৰা পৰ্যালয় কৰা কৰা কৰা কৰা কৰা কৰা কৰিছে। এই জন কৰা কৰা কৰা কৰা কৰা কৰা কৰা কৰা কৰা কৰা	WEST TO SERVICE THE SERVICE TO SERVICE THE	lbf-ft
Seismic shear		Education Carbon	lb
Wind moment			lbf-ft
Wind shear		。 连 (新)以及 (4)等 (4)的 (5)等于 (5)等于	ib
Anchor bolts			
Dia		- 20.4 0.80.80.00.00.80.80.80.80.80	in
Quantity			
Name of supplier to perform shop testing	Auguste, Ershigs or equal		
	Proposal 1	Proposal 2	

Tank	Coagulation Mix Tanks A & B
Menufacturer	Augusta, Ershiga or aqua
Tank type (open vs. closed top)	Open
Tank residence time (if applicable)	18 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Tank materials	
Resin	
Glass .	
Surfacing mat	
Chopped strand mat	
Continuous roving	

Vell		(2) - 12 (1) 12 (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	1
Cure Post cure			
Material thickness	(2) 전기의 가입 및 발레를 하는 일수, 4차 년	ar juga (1966) e kalenderu grafia (1965), sajungtara	<i>*</i>
Top head	William and William and Sulfanite.		al
Wall at top		alian e ling and statement of the face	
Wall at bottom	State process to the particle of against		lin
Tank bottom	Contract and the Profit of the War and the St	PART CONTRACTOR OF THE PROPERTY OF THE PROPERT	in.
insulation			
Inside diameter	1.8 2017年 1988年 1月27年 1月2日 1月2日 1月2日 1月2日 1月2日 1月2日 1月2日 1月2日	x 10 10 10 10 10 10 10 10 10 10 10 10 10	ft. and in.
Straight side length	41. (41.4 Sept. 15)		ft. and In.
Effective volume	3,453		gal
Weight			
Empty	A SECTION OF THE SECTION OF		lb
Flooded			lb
Shipping			ib lb
Selsmic moment			ibf-ft
Selamic shear			i Ib
Wind moment			lbf-ft
Wind shear		Self for Karley construction of Self-Field S	1b_
Anchor bolts Dia	Fildsteineng ubritzenen Afrik von der D		l _{in}
Quantity		Andreas and the control of the contr	iin
Name of supplier to perform shop testing	Augusta Frahios ocadus	Maria Caracana A	
Committee of antibuted to horizonth united reaming	Proposal 1	Proposal 2	
Tank		lix Tanks A & B	
Manufacturer	-5Restablish NAMER CONT		8.
Tank type (open vs. closed top)			24
Tank residence time (if applicable)			min
Tenk materials			
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Cure Post cure

r Treatment System			
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Post cure Material thickness			<u> </u>
Top head	Color Branch Color Color Service Color	e E Carre Con Ca	<u> </u>
Wall at top			
Well at bottom			•
Tank bottom			in.
Insulation			lin.
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	Proposal 1	Proposal 2	
T t-	Coagulant Storage Tank -	1101	
Tank	Option	HCI Tank - Option	ļ
Manufacturer	Augusta, Ershiga or equal	Augusta, Ershigs or equal	
Tank type (open vs. closed top)	Closed War and Salar Sal	Closed	ļ. —
Tank residence time (if applicable)	Massical Colonial in Establishment (Charles Cyr		min
Tank materials	The first two consists of the first of the first of	The second was the birth a law to be seen	
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Material thickness	 Classical and Health September 2000 200 and a like 	- Laboratoria de Caralle de Caral	ļ
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Inside diameter	4 5 5 5 5 10 10 10 10 4 1 4 1 4 1 4 1 1 1 1 1 1 1	10	ft. and in.
Straight side length	是**C25500000001430000000000000000000000000000		ft. and in.
Effective volume	6,000	6,000	gai
Weight	Constitute and constitute with North Section 5	13. m. 14.5 0. 5 0. 4 (1. April 2. Apri	11.
Empty			iib
Flooded			7
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Seismic moment			ibi-it
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Wind moment			lbi-ft
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Anchor bolts	AND CONTRACTOR A PROPERTY OF THE STATE	Was entare of the contract of the property of the first	
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Quantity			
Name of supplier to perform shop testing	Augusta, Ershigs or equal		l
	Proposal 1	Proposal 2	
ank	Sludge Hole		
Manufacturer	Augusta; Ershigs or equal		
Tank type (open vs. closed top)	Open 1,440		
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Tank residence time (if applicable)	registed for experient (#####\$SEVERENSES)		
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Anchor bolts			
Dia		等和证明的证明的证明的证明	in
Quantity	。在54.6%为15点的特别的特别的基础。		
Name of supplier to perform shop testing	Augusta, Ershigs or equal:	實際 可能 "知识",这名对他	

6.4.13 Gravity Filters

	Proposal 1	Proposel 3
Manufacturer	Siemens Water Technologies	
Materials of construction	FRP tank	
Backwash requirement	Approx 10 gpm continuous	gpm/sf
Service flow rate	2.4 normal	gpm/sf
Tank materials	FRE	
Average effluent turbidity	NA NA	DTN S S S S S S S NTU
Average effluent TSS	10 mm - 10 mm - 10 mm	moq See See See See See See See See See Se
Maximum rate of flow increase without effluent quality		gpm/hr
Backwash solids concentration	是是是"其是"。 是是是"其是"的是是是是是是是是是是是是是是是是是是是是是是是是是是是是是是是是	ppm

6.4.14 Large Bore General Service Velves (Furnished with Equipment)

·	Proposal 1	Proposal 2
Valve identification description	Diaphragm	
Valve manufacturer		是16年2月2日2月1日 (15年2月1日)
Туре	Straightway and weir	是1907年12日的新疆市第1000000000000000000000000000000000000
Size	See P&IDs	(表现的)。 (1)
Wetted materials	Cl body, rubber lined	
Valve Identification description	Butterfly	Spinister has been a few and the spinish of the
Vaive manufacturer	Bray 25 Control of the Control of th	
Туре	Section 1985 Euglis 2000 Annie	tend lipse specific per parallel men
Size	See P&IDs	设置是自己的人的基础。在第 3
Wetted materials	Cl body, EPDM seat, nylon coated disc	
Valve identification description	or to the second property and the	Tarribes to temperature
Valve manufacturer	Tuffine	and the very entire that the least of the
Type	Ping Assets	
Size	See P&IDs	SEXER-SOLUTION SPECIAL SECURIT
Wetted materials	Di hody TEE lined	

6.4.15 Small Bore General Service Valves (Furnished with Equipment)

	Proposal 1	Proposal 2
Valve identification description		
Valve manufacturer	SATISTAL DE MARCHE DE LA CALLACTE DE	
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Size		
Wetted materials	[1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	
Valve identification description	1. 文学·图·加拉斯·鲁萨·图·尼斯·斯特·第	
Valve manufacturer		
Туре		
Size		
Wetted materials	agranda agranda agranda area esta area esta esta esta esta esta esta esta es	

8.4.16 Control Valves (Furnished with Equipment)

	Proposal 1	Proposal 2
Valve identification description	Inlet control valve	
Valve manufacturer		
Туре	Weir diaphragm	해보는 발레인트 강성 12 No. 10 H

Wastewater Treatment System

Size	
Wetted materials	Cl body, rubber lined
Valve identification description	Sludge recycle and transfer control valve
Valve manufacturer	
Type	Weir diaphragm
Size	
Wetted materials	Cl body, rubber lined

8.0 ALTERNATES AND PRICING

The Vendor is requested to address alternate proposals by including either of the following statements: "Having compiled with the bidding requirements of your Specifications and attachments, we request due consideration to the attached alternate proposals, complete with prices and descriptive date for comparison to the base proposal" or Having complied with the bidding requirements of your Specifications and attachments, we do not offer an alternate proposal.

The Bidder's base bid shall meet the equipment requirements and match the treatment process as dictated by the attached flow diagrams and specifications contained herein. Alternate treatment methods or proprietary technologies not covered in these specifications should not be included in the Bidder's base proposal. In addition to the base bid, the Bidder may propose alternate bids which include alternate treatment technologies and/or changes to the specified process. The alternate bids must meet the effluent performance guarantees and specifically indicate where the Bidder has deviated from the specification requirements.

Justification for these deviations shall also be provided, whether technical or economical in nature. Evaporative treatment methods will not be acceptable to the Purchaser.

9.0 EXCEPTIONS

9.1 Exceptions shall be noted in accordance with Paragraphs 14.3 of the General Specifications.

•	ed to our p table to us		nd r efere n	ced below), It is under	stood that all of	the provisions conti	ained therein
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We have reviewed your Specifications and all related attachments. Unless specific exceptions are listed below

10.0 SUBCONTRACTORS

During the course of accomplishing work required by this inquiry, we will subcontract certain portions of the work to the firms listed below:

Name and Address of Subcontractor	Work to be Performed
Bowen	Clarifier installation

We understand that any changes in the above designated subcontractors after award of the contract must be pre-approved in writing by the Purchaser.

11.0 SIGNATURE

The undersigned hereby attests and affirms that: the inquiry documents have been read in detail by officers, employees, agents, or representatives of the company named below; that the company named below is fully qualified and able to perform in accordance with the terms and conditions of these inquiry documents; that he/she is an officer or employee of the company named below; that he/she is authorized to submit this Proposal, and, should Purchaser accept this Proposal, or any part or portion thereof, bind the company to the terms of these inquiry documents.

	SIGNATURE:	John Toms	
	Title:	Industrial Capit	al Sales
12.0	NAME OF CO	IPANY:	Siemens Water Technologies Corp
	Telephone Number	770-864-9334	
	Fax Number	770-664-9430	
13.0	DATE:		August 17, 2007

Equipment only wastewater treatment system proposal rev 0 2/15/2007

Attachment J - Technical Documents Required with Proposal

Overall equipment flow diagrams Overall equipment flow diagrams Dimensional drawings and weights of proposed components, including arrangement and areas needed for maintenance access. Complete description of proposed equipment. Summary description of codes and standards used, if different than specified, including a review of major differences. Replacement Parts information. Recommended spare parts list complete with description, prices, estimated lead time, and drawing showing locations. No List of special and maintenance tools to be furnished. Supplier's experience record with proposed equipment. Yes Complete description of the extent of field assembly of components. Petalled tank and reactor outline drawings for each tank/reactor, including nozzle locations. No Catalog cutsheets for major accessory equipment. No A description of bidder's recommended installation sequence. No Drawing showing arrangement of tank/silo appurtenances, including walkways and maintenance access locations. Ladder and manway details No Description of shop fabrication and coating methods. Electrical Load List - estimated hp or kw, voltage, and phases for all electrical loads including power consumption on average and maximum basis Yes Characteristic curves for each pump. No Major dimensions of each pump, complete with drive motor and baseplate. No Pump materials of construction. Yes Weights and operating loads of mixers. Potalls of roatings, thicknesses, surface preparation including product data sheets of proposed coating/lining materials. No Description of proposed PLC equipment, including manufacturer, model, memory type and capacity, types and capacity, types and capacity, types and quantities of I/O modules provided, and preliminary PLC system architecture and layout. Description of proposed optional programming software, including manufacturer, model, features, and capabilities.		Document Submitted with Proposal Package?
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Description of proposed interface to plant DCS, including communication standard,		Yes
	protocol, and media.	Yes

Description of proposed optional CRT-based graphical operator interface, including	
manufacturer, model, memory and disk capacities, MMI software type, MMI features	是黄色基本是是最近的基本是
and capabilities, and proposed operator displays.	Yes
Equipment storage requirements, including inside or outside requirements,	
requirements for controlled temperature or humidity, etc.	Na
Preliminary I/O list	No
Maximum and average system power consumption.	Yes
Maximum and average system service water consumption.	Yes
Maximum and average system chemical requirements.	Yes
Maximum and average system service air requirements.	Yes
Manufacturer and model of all proposed electric actuators.	No
Completed proposal fill-in data sheets	Yes
Major dimensions of each pump, complete with drive motor and baseplate.	No
Equipment storage requirements, including inside or outside requirements,	
requirements for controlled temperature or humidity, etc.	No
Estimated project schedule including site erection schedule and proposed delivery	
schedule that meets delivery window outlined in the specification.	
Number of truckloads needed to deliver all equipment to the project site.	
Insurance certificate	
Comment on ability to meet waiver of subrogation and additional insurance status for	
Gulf Power and its affiliates as outlined in commercial Section 18.	

SIEMENS WATER TECHNOLOGIES CORP., INTEGRATED SOLUTIONS **ORGANIZATION CHART** SOUTHERN COMPANY WASTEWATER TREATMENT SYSTEM Energy in Serve Your World's **EXECUTIVE SPONSOR** SIEMENS DIRECTOR OF PROJECTS KIM LUKENS PROJECT MANAGER TOM ZUBRITSKY VP GENERAL MANAGER **PROCESS** PROJECT PROCUREMENT, LEAD PROJECT LEAD ELECTRICAL QA PROJECT ADVISOR EXPEDITING, SHIPPING FIELD SERVICES ENGINEER ENGINEER ROBERT SELTMANN PRAKASH KHANOLKAR DAVE FRIEL DCC MECHANICAL DESIGN **DUANE BUTTRAY** TIM JOHNSON

Act ID	Description	Dur	Sch / Act Start	Sch / Act Finish	% Comp	ост	2007 NOV-	DEC	JAN	FEB	MAR	APR	MAY	2008 JUN	JUL	AUG	SEP	OCT NO
lastewater	Treatment System												l ,	1	1	-		!
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1005	Receive / Review Full Contract	0			+	0			[]			İ		1	1		į	!!
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1010	Turn-Over Meeting	5	05OCT07 08OCT07	05OCT07	0] .	1		: ,			1	:	1	1	1	1	
1020	Develop Project Execution Plan	1			0	٦,	:						:					
	Internal Project Kick-Off Meeting	0	15OCT07	15OCT07		! •								1			1	
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1068	Preliminary P&IDs (FA)	20	16OCT07	12NOV07	0		-	·				i	:	Ì	{	1	i	
1070	Preliminary PFDs / Mass Balance (FA)	20	16OCT07	12NOV07	0				, , I i			i.	:	· }	5	j	í	Í
1075	Process Description (FI)	20	16OCT07	12NOV07	0							1					i	1
1072	Facility General Arrangement (FRC)	25	16OCT07	19NOV07	0		1000		!!!			1	į.	,	i	:	1	
1133	Internal Review of Preliminary Engr Package	5	13NOV07	19NOV07	0			K	! !			i	ļ	1	i	1	1	
1134	Submit Preliminary Engr Package to Client	2	20NOV07	21NOV07	σ	1	1		i i			1	 I	i	1	i	1	
1135	Client Review / Approve Preliminary Engr Package	10	26NOV07	07DEC07	0	1	, 1							t (1		1	1
1152	Design Frozen	0		07DEC07	0								1	1	1		1	
1153	Resubmit PFD's/P&IDs/Facility GA (Excl Tagging)	10	10DEC07	21DEC07	0			533				į.		!	i	I	İ	1
1174	Submit PFD's/P&IDs/Facility GA (with Tagging)	20	26DEC07	23JAN08	0	1	i					i	i	į	1	i	1	į
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1076	Structural Loading Data & Operating Weights (FRC	10	06NOV07	19NOV07	0		· East							1	1	:	ì	1 1
1087	Embedded Anchor Bolt Plan (FI)	5	13NOV07	19NOV07	0									ì	1		ŀ	
1290	Hydraulic Profile	10	06NOV07	19NOV07	0			į.				1	ì	İ	i .		!	1 1
1164	Philosophy of Operation (FA)	20	10DEC07	09JAN08	0		!	8					í	1	1	:	1	1
1165	Submit Philosophy of Operation to Client	1	09JAN08	80NALe0	0]	1	:	1			! -	i	í i -	1	:	1	1 .1
1610	One Line Diagrams	20	26DEC07	23JAN08	0				2000						1			1
1166	Client Review / Approve Philosophy of Operation	15	10JAN08	30JAN08	0		i		1			1	1	1	1			
1670	Panel Layouts (FI)	25	26DEC07	30JAN08	0		,					:	į	1	Į	:	ì	1
1280	Pump Skid Layout Dwgs	40	10DEC07	06FEB08	0		4		I			1	1	1	Ì	:	ì	1 1
1696	Motor & Instrument Location Plan Drawing (FI)	10	24JAN08	06FEB08	0]									1		1	1 1
1790	Instrument Data Sheets (FRC)	10	31JAN08	13FEB08	0						,	1	:	1	1		1	1 1
1672	Panel Schematics (FI)	25	31JAN08	05MAR08	0		i	!	1	and the same		;	}	1	1		ł	<u> </u>
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1706	Field Wiring Schedule (FRC)	10	06MAR08	19MAR08	0				Į		i Maria	i						
1167	Sequence of Operations	20	28FEB08	26MAR08	0			(i	1	lana a	i	1	1	ļ	i	l	1
1077	Equipment Arangement (Outline) Drawings (FRC)	20	04MAR08	31MAR08	0		1	i	ı			4	i I-	1	f {		1	
1085	Pump Curves (FI)	5	02MAY08	80YAMPO	0				i		1			į				
1086	Piping Isometrics / Layout Drawings (FRC)	20	11APR08	09MAY08	0			1	į,		!			l r	!		:	
1097	Motor Data Sheets (FI)	5	02MAY08	80YAM20	0	1		1	1		i		1822	1	1	į	į	
1685	PLC Graphic Layout Drawings (FRC)	15	24APR08	15MAY08	0				1		ĺ			ĺ	Ì	i i	[1
1078	Equip Det Dwgs (Exc Walkways, Plat) (FRC)	33	01APR08	16MAY08	0			i .						1	1	1	1	: i
1686	PLC Control Program (FI)	60	27MAR08	19JUN08	0		,										1	
ists				•				j	1		!	3.E	i i	1		;	1	
1073	Preliminary Equipment List (FRC)	10	30OCT07	12NOV07	0			1	1		!	:			!]	i
1074	Preliminary Electrical Load List (FRC)	10	300CT07	12NOV07	0	1		1						1			ļ	
1750		10	300CT07		0			ĺ	}		1	4	Ť	l	1	1	1	i
1760	Utility List (FRC) Chemical Usage (FRC)	10	300CT07	12NOV07 12NOV07	0			ı İ	i		ļ		!	i I			ì	i. I
1770	Equipment List (FRC)	10	26NOV07	07DEC07	0				1		i I	:		i I	:		r i	i I
1154	I/O List (FRC)	10	10DEC07	21DEC07	0								i .				1	t.
1675	Control Valve List (FRC)	10	26DEC07	09JAN08	0			n			1	1		1	1		1	ļ
1676	Manual Valve / Minor Equipment List (FRC)	10	26DEC07	09JAN08	0			100			İ	i	ì	1	ŧ	į	i	1
1730	Instrument List (FRC)	10	17JAN08	30JAN08	0						i I	1	1	1	ì		1	1
1800	Recommended Spare Parts List (FI)	10	27OCT08	07NOV08	0				-		:	:	ì	i I			1	; E
1810	Special Tools List (FI)	5	03NOV08	07NOV08	0			i			la ee		ļ	1	1	1		
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2830	O&M Manuals (FI)	10	27OCT08	07NOV08	0						i		1	,	,			,
2850	Installation Manual / Instructions (FI)	10	27OCT08	07NOV08	0		1	- 1	į		1	į.	1	1	1	Ť.	ļ	
2840	Training Manual (FI)	10	10NOV08	25NOV08	0				,		i	·	i	ĺ	1		1	i
2860	Commissioning / Startup Plan (FI)	10	10NOV08	25NOV08	0			. !	,		1	1×1	1	,	1	4	1	1
2870	Performance Test Plan (FI)	10	26NOV08	09DEC08	0						! 		<u>. </u>	: 	: 	-	<u></u>	
QA				·					i				•	!		1	!	1
1069	Project Specific Inspection & Test Plan (FI)	10	30OCT07	12NOV07	0								į	1	!			;
1079	QA / QC Program	5	06NOV07	12NOV07	0			!			1	1	1	1		1	İ	1
1099	Welding Procedures (FI)	10	13NOV07	28NOV07	0				1		l	ļ	!	}	1	<u> </u>	1	1
1109	Coating & Surface Preparation Specs (FRC)	10	13NOV07	28NOV07	0					0	1		<u> </u>	i I	1	[1	ł
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1119	Coating Manufacturer Product Data Sheets (FRC)	5	04MAR08	10MAR08	0		į					į		i	!	1	1	
1089	Manufacturer Data Books	30	27OCT08	09DEC08	0		1			Ĺ	1	í	i	ł		1	I	1000
rocureme	nt / Delivery						1			[i	i			i	i	i	
Chemical F	eed Skids						t .			1						- 1	i	
2988	Develop RFQ / Release to Purchasing	5	10JAN08	16JAN08	0		1			1							1	
2990	Issue RFQ's to Suppliers	10	17JAN08	30JAN08	0		1			i i			i	j	1	į	1	
2995	Review of Quotations Technical & Commercial	5	31JAN08	06FEB08	0									í		i	Ì	i
3000	Requisition Released to Purchasing	3	07FEB08	11FEB08	0					89				1	. 3	1	1	
3010	Purchase Order Placed with Supplier	5	12FEB08	18FEB08	0					<u> </u>								
3020	Vendor Engineering Process	30	19FEB08	31MAR08	0									į		1		í
3030	IS Review of Vendor Engineering	5	01APR08	07APR08	0		!			i	1		1	j	!	1	1	I
3040	IS Return Drawings to Supplier with Comments	1	08APR08	08APR08	0		i			1		1		i	(İ		
3045	Component / Fabrication Receipt	10	09APR08	22APR08	0		1		i I		1						1	
3065	Ready for Inspection	1	22AUG08	22AUG08	0					;		,			1	1 ,	,	
3060	Manufacturing Process	90	23APR08	28AUG08	0		1			1	l :							
3070	Ready to Package & Ship to Site	5	29AUG08	05SEP08	0		1			1	1	:		1	1	Ę	3	1
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5560	Develop RFQ / Release to Purchasing	5	07FEB08	13FEB08	0		:			B				,				
5570	Issue RFQ's to Suppliers	5	14FEB08	20FEB08	0		İ							,	i	!	i	
5580	Review of Quotations Technical & Commercial	2	21FEB08	22FEB08	0						1			1	i		J	
5590	Requisition Released to Purchasing	3	25FEB08	27FEB08	0		1) 2)			. 0	i			j				1
5600	Purchase Order Placed with Supplier	5	28FEB08	05MAR08	0					1				1				
5602	Vendor Engineering Process	20	06MAR08	02APR08	0							1						
5603	IS Review of Vendor Engineering	5	03APR08	09APR08	0					1]		1	į		
5604	IS Return Drawings to Supplier with Comments	1	10APR08	10APR08	0		ì		!	1	{	I	- 1	i	9	ı		l
5610	Manufacturing Process	100	11APR08	02SEP08	0		i			ŀ	í						3	1
5630	Ready to Package & Ship to Site	5	03SEP08	09SEP08	0					•	i .	٠						1
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5960	Develop RFQ / Release to Purchasing	5	10DEC07	14DEC07	0		i	•		i	(ì	1		!	
5970	Issue RFQ's to Suppliers	10	17DEC07	02JAN08	0		l			į	I	i		i				1
5980	Review of Quotations Technical & Commercial	5	03JAN08	09JAN08	0		î			; !				ì				
5990	Requisition Released to Purchasing	3	10JAN08	14JAN08	0					1		,	0 5		,			
6000	Purchase Order Placed with Supplier	5	15JAN08	21JAN08	0		Į.		=	l					i	1		
6010	Vendor Engineering Process	30	22JAN08	03MAR08	0		ŧ				į.	1		1		j		
6020	IS Review of Vendor Engineering	5	04MAR08	10MAR08	0					i f					1			

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6030 IS Return Drawings to Supplier with Comments 1 11MAR08 11MAR08 0	
6060 Ready for inspection 1 200CT08 200CT08 0	.1 1 1 1 1 .
Centrifugal Pumps	1 1 1 1
5480 Develop RFQ / Release to Purchasing 5 10DEC07 14DEC07 0	
5490 Issue RFQ's to Suppliers 5 17DEC07 21DEC07 0	
5500 Review of Quotations Technical & Commercial 2 26DEC07 27DEC07 0	
5510 Requisition Released to Purchasing 3 28DEC07 02JAN08 0	
5520 Purchase Order Placed with Supplier 5 03JAN08 09JAN08 0	
5620 Vendor Engineering Process 15 10JAN08 30JAN08 0	
6250 IS Review of Vendor Engineering 5 31JAN08 06FEB08 0	
6260 IS Return Drawings to Supplier with Comments 1 07FEB08 07FEB08 0	
5530 Manufacturing Process 50 08FEB08 17APR08 0	
5540 Ready to Package & Ship to Skid Manufacturer 5 18APR08 24APR08 0	
5550 Ready to Package & Ship to Site 5 26AUG08 02SEP08 0	
Pump Skids	
6200 Develop RFQ / Release to Purchasing 5 07FEB08 13FEB08 0	1 1 1 1
6210 Issue RFQ's to Suppliers 10 14FEB08 27FEB08 0	
6220 Review of Quotations Technical & Commercial 5 28FEB08 05MAR08 0	
6230 Requisition Released to Purchasing 3 06MAR08 10MAR08 0	
6240 Purchase Order Placed with Supplier 5 11MAR08 17MAR08 0	
6300 Ready for Inspection 1 21AUG08 21AUG08 0	
6290 Manufacturing Process 115 18MAR08 27AUG08 0	
6310 Ready to Package & Ship to Site 5 28AUG08 04SEP08 0	
Sump Pumps	
7500 Develop RFQ / Release to Purchasing 5 20MAR08 26MAR08 0	
7510 Issue RFQ's to Suppliers 10 27MAR08 09APR08 0	
7520 Review of Quotations Technical & Commercial 3 10APR08 14APR08 0	
7530 Requisition Released to Purchasing 3 15APR08 17APR08 0	
7540 Purchase Order Placed with Supplier 5 18APR08 24APR08 0	
7550 Vendor Engineering Process 10 25APR08 09MAY08 0	
7560 IS Review of Vendor Engineering 5 12MAY08 16MAY08 0	
7570 IS Return Drawings to Supplier with Comments 1 19MAY08 19MAY08 0	
7580 Manufacturing Process 70 20MAY08 26AUG08 0	
7600 Ready to Package & Ship to Site 5 27AUG08 03SEP08 0	
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6640	Develop RFQ / Release to Purchasing	5	31JAN08	06FEB08	0	I.	i	ì	<u> </u>		ĺ	1				i
6650	Issue RFQ's to Suppliers	10	07FEB08	20FEB08	0			i		: : ! :			1			
6660	Review of Quotations Technical & Commercial	5	21FEB08	27FEB08	0		i.	į.				- 1				1
6670	Requisition Released to Purchasing	3	28FEB08	03MAR08	0		i				į	1			ĺ	
6680	Purchase Order Placed with Supplier	5	04MAR08	10MAR08	0	1	(4)	I	[1	į		,	ł	1 1
6690	Vendor Engineering Process	10	11MAR08	24MAR08	0		1	i i	1		1	1				1 1
6700	IS Review of Vendor Engineering	5	25MAR08	31MAR08	0			i	1			-				1
6710	IS Return Drawings to Supplier with Comments	1	01APR08	01APR08	0		1	ļ		?		J			,	1 1
6740	Ready for Inspection	1	05JUN08	05JUN08	0	į.	i	1	Í		1	{	l		1	1
6730	Manufacturing Process	50	02APR08	11JUN08	0	i		1								i :
6750	Ready to Package & Ship to Skid Manufacturer	5	12JUN08	18JUN08	0		i i	1	1	1						1 1
PLC			1				-	-	,	,		-				-
6520	Develop RFQ / Release to Purchasing	5	28FEB08	05MAR08	0	ì	Ü	!	į ,	2	:					1 1
6530	Issue RFQ's to Suppliers	10	06MAR08	19MAR08	0	*		}	i	Luis	1	į			1	i i
6540	Review of Quotations Technical & Commercial	5	20MAR08	26MAR08	0			1	1						i i	1 1
6550	Requisition Released to Purchasing	3	27MAR08	31MAR08	0		,	1	,						i	
6560	Purchase Order Placed with Supplier	5	01APR08	07APR08	0		<i>f</i>	Ì	ļ						. !	
6570	Vendor Engineering Process	20	08APR08	06MAY08	0	1	î	1	1	ĵ	1			9	. }	1
6580	IS Review of Vendor Engineering	5	07MAY08	13MAY08	0		5 1	i	1	ì					1	1 :
6590	IS Return Drawings to Supplier with Comments	1	14MAY08	14MAY08	0			ļ	i			1			,	
6620	Ready for Inspection	1	29AUG08	29AUG08	0		ŧ	!		1					1	1 1
6610	Manufacturing Process	80	15MAY08	05SEP08	0	:		Į.		i i	1	10000				1 :
6630	Ready to Package & Ship to Site	5	08SEP08	12SEP08	0	:	1	ŀ)		rr i					ı i "i
	ations / Safety Showers		003E1 00	123L1 00		1		<u> </u>	1	r s	, 1					- T
7610	Develop RFQ / Release to Purchasing	5	30MAY08	05JUN08	0	· ·	15	j	1		1		3			1 1
7620	Issue RFQ's to Suppliers	10	06JUN08	19JUN08	0	i	*	l	1				E.XI		1	1 1
7630	Review of Quotations Technical & Commercial	2	20JUN08	23JUN08	0	i		1	1	i	: :	1			1	1 :
7640		3			0	1		i	i	1	I i					1
7650	Requisition Released to Purchasing	5	24JUN08 27JUN08	26JUN08 03JUL08	0			1				j		a .		1
7690	Purchase Order Placed with Supplier	40	07JUL08	29AUG08	0			į,	1 .		. 1			ESSENSION .		
	Manufacturing Process	5			0	1	i	i	1	1						1 1
7700 Sample Sini	Ready to Package & Ship to Site	5	02SEP08	08SEP08	U			-	1		1 1				,	1 1
_		-	201447/00	OC II INIOO	1 0		1	,	1	1		E	3		. 1	
7710	Develop RFQ / Release to Purchasing	5	30MAY08	05JUN08	0		į.		;	1	: :	Ī				1 1
7720	Issue RFQ's to Suppliers	10	06JUN08	19JUN08	0	1	i	ĺ	1	i	1 1				1	1 .
7730	Review of Quotations Technical & Commercial	2	20JUN08	23JUN08	0			Data	-			Douglai.			Charles	d Anno
nish date	09DEC08						08AL	Date IG07		_		Revision	JII		Checke	d Appro
		Matar	Tochnol	ogioe			JUAC							110		
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oject name	SC00 WWTS Pr	elimin	ary Sche	dule												
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Act ID	Description	Dur	Sch / Act Start	Sch / Act Finish	% Comp	ост	2007 NOV	DEC	JAN	FER	MAR	APR	MAY	2008 IIIN	JUL	4110	SEP	OCT N
7740	Requisition Released to Purchasing	3	24JUN08	26JUN08	0	001	NO2	1	1	1	IIIAN	1	1	3014	1	1	327	001 11
7750	Purchase Order Placed with Supplier	5	27JUN08	03JUL08	0			I	i	i	1	1		, E	ģ			ì
7790	Manufacturing Process	40	07JUL08	29AUG08	0		i		;	1	i · · · ·	1	; i				. 1	
7800	Ready to Package & Ship to Site	5	02SEP08	08SEP08	0			1		1	1			•				
Injection Q							:	1	1			1	i	1	1			-;
7810	Develop RFQ / Release to Purchasing	5	01MAY08	08MAY08	0		i	t t	1	1	1	1		I	ļ	1		1
7820	Issue RFQ's to Suppliers	10	09MAY08	22MAY08	0		1	1	i	1	I	4		;	1			1
7830	Review of Quotations Technical & Commercial	2	23MAY08	26MAY08	0				1	1			. 9	1	į			į
7840	Requisition Released to Purchasing	3	27MAY08	29MAY08	0			:	1	į.	1		· .	a,				1
7850	Purchase Order Placed with Supplier	5	30MAY08	05JUN08	0)	I	Į	İ	•	ł		1			ı.
7890	Manufacturing Process	60	06JUN08	29AUG08	0		1	:	: !	1		1						!
7900	Ready to Package & Ship to Site	5	02SEP08	08SEP08	0				t t			1	1	1	*			1
FRP Tanks	ready wit addaged a crisp to one		OLOL: 00	0002100	, ,				1		-		-		:	-		;
7000	Develop RFQ / Release to Purchasing	5	03JAN08	09JAN08	0		i			1		1	į	i	Į.	1		į
7010	Issue RFQ's to Suppliers	10	10JAN08	23JAN08	0		I	1	10.67	1	į	1	1	i	Î	i	i	
7020	Review of Quotations Technical & Commercial	5	24JAN08	30JAN08	0		1		. 5	g.	:	1	i i	E E	r I	: :		
7030	Requisition Released to Purchasing	3	31JAN08	04FEB08	0				1	8	,							-
7040	Purchase Order Placed with Supplier	5	05FEB08	11FEB08	0		1		!	100	i	ê	5 1	i	!		1	1
7050	Vendor Engineering Process	30	12FEB08	24MAR08	0	1	į	;	ľ	1		1	1 .		į	,		i
7060	IS Review of Vendor Engineering	5	25MAR08	31MAR08	0			1	i I		. (8			1	1	1	
7070	IS Return Drawings to Supplier with Comments	1	01APR08	01APR08	0				1	í		i			i			i
7100	Ready for Inspection	1	15SEP08	15SEP08	0		1		į,		1	1	•	i ,	!			- 1
7090		120	02APR08	19SEP08	0		į]	į	1		LONG COLUMN	all North	-	OSE WAS	1900 FG (1900	1	1
7110	Manufacturing Process	5	22SEP08	26SEP08	0				1	-	!	1		j =	i		i a	1
Instrument	Ready to Package & Ship to Site	5	223EP06	205EPU6	U							-		:	-			1
	September 1997 (September 1997)		24 14 100	OCEE DOO				ŧ.	1		!			i i	1			1
5640	Develop RFQ / Release to Purchasing	5	31JAN08 07FEB08	06FEB08	0			i	1	100	1	÷	Į.	į				1
5650	Issue RFQ's to Suppliers	-		13FEB08	0			1	i		i	i	ĺ		1			1
5660	Review of Quotations Technical & Commercial	2	14FEB08	15FEB08	0		:		1		i I	8	1	1	1			1
5670	Requisition Released to Purchasing	3	18FEB08	20FEB08	0	l					'n	1		4				
5680	Purchase Order Placed with Supplier	5	21FEB08	27FEB08	0		ļ	;	.[. "	1	į.	1	1				. !
6270	Vendor Engineering Process	10	28FEB08	12MAR08	0	-	1	į	l	1	T	1	1	1	1	i	j	1
6320	IS Review of Vendor Engineering	5	13MAR08	19MAR08	0				:	i	, 1	1	:	i				
6330	IS Return Engr Package to Supplier with Comments	1	20MAR08	20MAR08	0			1		ì				į	į			
5690	Manufacturing Process	40	21MAR08	16MAY08	0		1	1	1	1			· 8	1	!	1	4	
5700	Ready to Package & Ship to Skid Manufacturer	5	19MAY08	23MAY08	0			!	1 -	1 .	ļ	i		1	I s		ļ)	!
5710	Ready to Package & Ship to Site	5	26AUG08	02SEP08	0	<u> </u>	-	-		:	'				-			
nish date	09DEC08						-	DBAUC	Date		-		Revis	ion	_	Chec	ked	Approv
ata date		oto-	Tachnala	aioo				00/100	307		_							
ın date	17AUG07						-			Automo								
ge number	7A Southern Compa				on													
oject name	SC00 WWTS Pre	limin	ary Sche	dule														
	Systems, Inc.		(20)				_				-						_	

	ict .	Description	Dur	Sch / Act Start	Sch / Act Finish	% Comp	ост	2007 NOV	DEC	IAN	ee e	MAR	APP	MAY	2008 JUN	1854	AUG	SED	OCT NO
Lime S	Silo	,				<u>*</u>		1	i	1	123	III AIN		10.51	100	302	700	361	001 1101
6080	Develop Ri	Q / Release to Purchasing	5	03JAN08	09JAN08	0	1		1						:		1	1	
6090		s to Suppliers	10	10JAN08	23JAN08	0		1							1				
6100		Quotations Technical & Commercial	5	24JAN08	30JAN08	0	1								i	i.			
6110		Released to Purchasing	3	31JAN08	04FEB08	0		1	2	!			: !		1	i	1	()	ı
6120		Order Placed with Supplier	5	05FEB08	11FEB08	0	1	i	ï	ł			i :		l	ĺ		1	į
6130	·	gineering Process	30	12FEB08	24MAR08	0	1	11 8	,					ë P	i I	i ·		1	- 1-
6140		of Vendor Engineering	5	25MAR08	31MAR08	0	1			:			l			ř		1	i
6150		Drawings to Supplier with Comments	1	01APR08	01APR08	0		1		ļ	į .)			!	1	1 1	
6180	Ready for I		1	15SEP08	15SEP08	0	1	i	I	1	ļ.		:		!	l			
6170		ing Process	120	02APR08	19SEP08	0		i		ł								Ter.	i
6190		ackage & Ship to Site	5	22SEP08	26SEP08	0			. "										1
003	fly Valves									1						ı			
4498		FQ / Release to Purchasing	5	10JAN08	16JAN08	0	1	1							l	(. !
4500		's to Suppliers	5	17JAN08	23JAN08	0	1	Ì			į		i i		ĺ	į	1	1	į
4510		Quotations Technical & Commercial	2	24JAN08	25JAN08	0					1				i i	1		1	1
4515	Total or Committee	Released to Purchasing	3	28JAN08	30JAN08	0	1				1				¥.				
4520		Order Placed with Supplier	5	31JAN08	06FEB08	0	-	1		Į.					Į.			,	. 1
4508		gineering Process	10	07FEB08	20FEB08	0	1	į		!		ı	1 1		I		l	j ?	
4518		of Vendor Engineering	5	21FEB08	27FEB08	0	1	1	į.	í	1 83	i			ĺ	i i	1	1)	1
4528		Engr Package to Supplier with Comments	1	28FEB08	28FEB08	0		ie G		i.					i L				
4570		ing Process	80	29FEB08	20JUN08	0	1	i	ı	1							1	1 1	
4580		ackage & Ship to Skid Manufacturer	5	23JUN08	27JUN08	0		is .	i	1	i		1			1	: 1		
4582		ackage & Ship to Site	5	26AUG08	02SEP08	0]		1.	į.	1				1	P		2	3
	Valves	addge a chip to cite		2010000	OZOLI OO			3		i	1	1			I	1	1		
5000	Develop RI	FQ / Release to Purchasing	5	10JAN08	16JAN08	0					1				i	i.			1
5010		's to Suppliers	5	17JAN08	23JAN08	0				2					ļ	1			10 Sc
5020		Quotations Technical & Commercial	2	24JAN08	25JAN08	0	1	!	;	1	1	1			Į.	!	i	1	1 1
5030		Released to Purchasing	3	28JAN08	30JAN08	0	1				i	í	1		1	•			(i
5040		Order Placed with Supplier	5	31JAN08	06FEB08	0	-			1	ò				î L	£ .		1	
6340		gineering Process	10	07FEB08	20FEB08	0	1	3			1						ļ. e. e		
6350		of Vendor Engineering	5	21FEB08	27FEB08	0	1	1							į.	1			
6360		Engr Package to Supplier with Comments	1	28FEB08	28FEB08	0	1	1	i						l	1	1	l	
5050	0.000	ring Process	50	29FEB08	09MAY08	0	1	i	:	E E	. 1				r I	f f	1	1	
5060		ackage & Ship to Skid Manufacturer	5	12MAY08	16MAY08	0			,	1					i	,			
5070		ackage & Ship to Site	5	26AUG08	02SEP08	0		1			1		1 . [· ·	8	j villa Li
100.0	rioudy to 1			2010000	0202100		-	-		Date	`	T	-	Revisi	on	-	Chec	ked	Approved
Finish date								(DBAUC					101101			0,100	1	
Data date		Siemens W	ater '	Technolo	aies														
Run date	17AUG07 ber 8A	Southern Compa			•	on													
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		THE STEEL		ary Scile	uule							-							
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Act ID		Description	Dur	Sch / Act Start	Sch / Act Finish	% Comp	ост	2007 NOV	DEC	JAN	FEB	MAR	APR	MAY	2008 JUN	JUL	AUG SE	P OCT N
Diaphragm	Valves		- ,					1		1	ì		1	!	ì		!	
5080	Develop RFQ	/ Release to Purchasing	5	10JAN08	16JAN08	0	1	1	1	•	i	1	T	1		1	ì	1 1
5090	Issue RFQ's t	o Suppliers	5	17JAN08	23JAN08	0		ž	i		1	1	i.	1	i i	!	i	1 1
5100	Review of Qu	otations Technical & Commercial	2	24JAN08	25JAN08	0								1	1	1		
5110		eleased to Purchasing	3	28JAN08	30JAN08	0		1			o¦		1	1	1		ļ	
5120	Purchase Ord	der Placed with Supplier	5	31JAN08	06FEB08	0	ĺ	1	ì	į		1	į	1	ļ		1	1 1
6370	Vendor Engin	eering Process	10	07FEB08	20FEB08	0			į	1			1		I	1	1	1
6380	IS Review of	Vendor Engineering	5	21FEB08	27FEB08	0	1	1		1		ľ	1		i	i i	1	1 1
6390		gr Package to Supplier with Comments	1	28FEB08	28FEB08	0		:	,	1	1	l			t i			! !
5130	Manufacturing		60	29FEB08	23MAY08	D		j	1	ł	ł			270 E	1	-	-	1
5140		kage & Ship to Skid Manufacturer	5	26MAY08	30MAY08	0				1	1	i	i		a;	ì	i	1 :
5150		kage & Ship to Site	5	26AUG08	02SEP08	0			:	1	1			, I				
Knifegate V								:	í	1					1			1
5160		/ Release to Purchasing	5	10DEC07	14DEC07	0	1	1	Ø	1	i		ì	i	i		1	l i
5170	Issue RFQ's I		5	17DEC07	21DEC07	0		į	. 0	į	1	1		Į	i		1	1 1
5180		otations Technical & Commercial	2	26DEC07	27DEC07	0	1		, ,	l¦				i	i			1 1
5190		eleased to Purchasing	3	28DEC07	02JAN08	0			. 1		i	1			1			1 1
5200		der Placed with Supplier	5	03JAN08	09JAN08	0		1	i		l	i ı	í	1	1		l l	
6760		neering Process	10	10JAN08	23JAN08	0		1		1	1		ė	ı	!		i.	į į
6770		Vendor Engineering	5	24JAN08	30JAN08	0	1			, E	3	1			i		1	1
6780		gr Package to Supplier with Comments	1	31JAN08	31JAN08	0		:		1	('	1	1		ī	r r		1
5210	Manufacturin		70	01FEB08	09MAY08	0		:					1		1			1 :
5220		ckage & Ship to Skid Manufacturer	5	12MAY08	16MAY08	0		!	1	1	1	1	ļ		i	}		1 1
5230		ckage & Ship to Site	5	26AUG08	02SEP08	0	1	1		Ť.	i	1	1	1		1		1 1
Flow Contr					0202. 00					í	:	1	;	i	i	i	: 1	1 1
5240		/ Release to Purchasing	5	10JAN08	16JAN08	0	1					1			1			
5250	Issue RFQ's		5	17JAN08	23JAN08	0	i	1	1		I.	,	ž.	i	1	1		1 .
5260		uotations Technical & Commercial	2	24JAN08	25JAN08	0			i	1 8	-	ł	1	į	ì	1	1	1 :
5270		Released to Purchasing	3	28JAN08	30JAN08	0		i	;	i i	œi ei	Í	i	ì	i	}	: 1	i i
5280		der Placed with Supplier	5	31JAN08	06FEB08	0		1		i i	6	1	ï		1	i		
6790		neering Process	10	07FEB08	20FEB08	0				t.		1	4	See a m	! .			
6800	-	Vendor Engineering	5	21FEB08	27FEB08	0	1			1		3	1	1	1	1	: :	1 1
6810		gr Package to Supplier with Comments	1	28FEB08	28FEB08	0	1	į	1	1	1	i	ĺ	1	1	ì	: 1	i :
5290	Manufacturin		70	29FEB08	06JUN08	D	1		1	1	•	BESCHE!				1		1 1
5300		ckage & Ship to Skid Manufacturer	5	09JUN08	13JUN08	0	1			ì	i				. 0			
5310		ckage & Ship to Site	5	26AUG08	02SEP08	0		1 .	1 .	ļ.	1	1	1	1	1	1		
0010	ricady to 1 at	chage a only to one		2010000	OZOLI GO		_	T		Date		_		Revis	ion		Checked	Appro
nish date	09DEC08							-	UA80			_		INCVIS			Oncore	Арріо
ita date	01OCT07	Siemens W	ater '	Technolo	naies													
n date	17AUG07	Southern Compa				on.												
ge number	9A					JII		-				\perp			_			
oject name	SC00	WWTS Pre	ıımın	ary Sche	aule													

Act ID	Description	Dur	Sch / Act Start	Sch / Act Finish	% Comp	ост	2007 NOV	DEC	JAN	FEB	MAR	APR	MAY	2008 JUN	391	AJG	SEP	ост
Pinch Valve	8						1		i		}			!				
5320	Develop RFQ / Release to Purchasing	5	10JAN08	16JAN08	0		!			ĺ	i			1	1	1		i
5330	Issue RFQ's to Suppliers	5	17JAN08	23JAN08	0		1	;		1	ŀ	· .		1	ł			i
5340	Review of Quotations Technical & Commercial	2	24JAN08	25JAN08	0			i.	. 0	i	5			Š	i i			i
5350	Requisition Released to Purchasing	3	28JAN08	30JAN08	0				1 1	į	l.			i	1	:		į.
5360	Purchase Order Placed with Supplier	5	31JAN08	06FEB08	0				i		ŀ				}	;		!
6820	Vendor Engineering Process	10	07FEB08	20FEB08	0				1		1			i	1			Ì
6830	IS Review of Vendor Engineering	5	21FEB08	27FEB08	0				1		F.			:	:		i	:
6840	IS Return Engr Package to Supplier with Comments	1	28FEB08	28FEB08	0				i		ť			j	i.			1
5370	Manufacturing Process	50	29FEB08	09MAY08	0			e r	1	1	5-2-300	NO.		1				1
5380	Ready to Package & Ship to Skid Manufacturer	5	12MAY08	16MAY08	0			1	1	İ	1			1	I	l	ì	1
5390	Ready to Package & Ship to Site	5	26AUG08	02SEP08	0		1	i .	1	1	1	1		1	1		9	1
Pressure Re	elief Valves						-	1	:						1	1		4
5400	Develop RFQ / Release to Purchasing	5	10JAN08	16JAN08	0		i			1	1			1		1	1	1
5410	Issue RFQ's to Suppliers	5	17JAN08	23JAN08	0	1	i	I		1	1	i	f	1	i	!	!	1
5420	Review of Quotations Technical & Commercial	2	24JAN08	25JAN08	0	Ì	i		. 8	İ				i	i		i	į.
5430	Requisition Released to Purchasing	3	28JAN08	30JAN08	0	1	i	:	; 1	1		:		1	1	:		1
5440	Purchase Order Placed with Supplier	5	31JAN08	06FEB08	0	1		:	:		1			3			:	
6850	Vendor Engineering Process	10	07FEB08	20FEB08	0		6 5	ŀ	i			i		i			1	
6860	IS Review of Vendor Engineering	5	21FEB08	27FEB08	0		r	i	}) [J _i	i	Ė	1	!	,		1
6870	IS Return Engr Package to Supplier with Comments	1	28FEB08	28FEB08	0	1		8	i	i	{	-		}			:	1
5450	Manufacturing Process	60	29FEB08	23MAY08	0	1			1	1			1000				1	1
5460	Ready to Package & Ship to Skid Manufacturer	5	26MAY08	30MAY08	٥		I.		į.	1	1		, 1	5			,	1
5470	Ready to Package & Ship to Site	5	26AUG08	02SEP08	0		i	1	1	1	1	Ι''''	1	i		E		1
Variable Fre	equency Drives	•	•				i	1	[ţ	1	1	1	1	j	i	ì	1
7910	Develop RFQ / Release to Purchasing	5	10APR08	16APR08	0			:	i	1	i		1	i	1	4	í I	1
7920	Issue RFQ's to Suppliers	5	17APR08	23APR08	0						1				1			i
7930	Review of Quotations Technical & Commercial	2	24APR08	25APR08	0		v .	1	1	1	1		1	1	1		1	1
7940	Requisition Released to Purchasing	3	28APR08	30APR08	0		i	i	i	1	1	; [1	i	1	·		ļ
7950	Purchase Order Placed with Supplier	5	01MAY08	08MAY08	0	1	1	i	1	1	1			i	i	·	i.	1
7960	Vendor Engineering Process	10	09MAY08	22MAY08	0]				i	1			1		1	r I	1
7970	IS Review of Vendor Engineering	5	23MAY08	29MAY08	0		1		1	L L	I.	1	. 6	o'	1	£.	t L	I.
7980	IS Return Engr Package to Supplier with Comments	1	30MAY08	30MAY08	0		1		1	Į.	1	í	}	£	1	i	1	1
7990	Manufacturing Process	60	02JUN08	25AUG08	0		i	ė.	1	i	i				STATE OF THE PARTY OF	50300	Î	Î
8000	Ready to Package & Ship to Site	5	26AUG08	02SEP08	0				1	{	1	1		i i	1	1 0	1	Ĺ
Access Wal	kways, Bridges & Stairs				•			:	1						1		;	

Finish date	09DEC08
Data date	01OCT07
Run date	17AUG07
Page number	10A ·
Project name	SC00
© Primavera	Systems, Inc.

Siemens Water Technologies Southern Company - Crist Power Station WWTS Preliminary Schedule

Date	Revision	Checked	Approved
08AUG07			
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Act ID	Description	Dur	Sch / Act Start	Sch / Act Finish	% Comp	ост	2007 NOV	DEC	JAN	FE6	MAR	APR	MAY	2003 JUN	JUL	AUG	SEP	ост	NOV
6400	Develop RFQ / Release to Purchasing	5	07FEB08	13FEB08	0				1	18				1					
6410	Issue RFQ's to Suppliers	10	14FEB08	27FEB08	0				1		4	!	Ĺ	I	i	1	1		
6420	Review of Quotations Technical & Commercial	5	28FEB08	05MAR08	0			e. B	()	1		i	í	ĺ			1		:
6430	Requisition Released to Purchasing	3	06MAR08	10MAR08	0				i.	i	U		ž ž	į			1		,
6440	Purchase Order Placed with Supplier	5	11MAR08	17MAR08	0				1	1	123	1	1	1	j :			!	
6450	Vendor Engineering Process	30	18MAR08	28APR08	0				1	1			II.	į	!		!		1
6460	IS Review of Vendor Engineering	5	29APR08	06MAY08	0			E.	i	Ì	1	1		ĺ	ļ		i		.
6470	IS Return Drawings to Supplier with Comments	1	07MAY08	07MAY08	0		e a	e E	1	ì	i I	1	1	1	:				
6500	Ready for Inspection	1	22AUG08	22AUG08	0			e. C	i.		i.	,	1			. 1	1		1
6490	Manufacturing Process	80	08MAY08	28AUG08	0		l .		i			i				man u	1		
6510	Ready to Package & Ship to Site	5	29AUG08	05SEP08	0				1	i	į .	1	1	1	İ		Į į	1	1
Interconnect	ing Piping			· · · · · · · · · · · · · · · · · · ·					ì	!	į			ĺ	Ì	1	i		1
9000	Develop RFQ / Release to Purchasing	5	12MAY08	16MAY08	0				C .		1	1	- 📵	1					;
9010	Issue RFQ's to Suppliers	10	19MAY08	30MAY08	0		l .		i L	1	1	3		ţ	1	:	!	i	:
9020	Review of Quotations Technical & Commercial	5	02JUN08	06JUN08	0			E .	1	1	į		1	C	į į		i	1	
9030	Requisition Released to Purchasing	3	09JUN08	11JUN08	0				1		i	į	1	B	i		1	:	
9040	Purchase Order Placed with Supplier	5	12JUN08	18JUN08	0				L I	1	i	E .		[2]	1		r L		
9050	Manufacturing Process	60	19JUN08	12SEP08	0				1					1 100		DIEG.			
9070	Ready to Package & Ship to Site	5	15SEP08	19SEP08	0				i	,	1	1	i	!	!	:			1

Finish date	09DEC08
Data date	01OCT07
Run date	17AUG07
Page number	11A
Project name	SC00

Siemens Water Technologies Southern Company - Crist Power Station WWTS Preliminary Schedule

Revision	Checked	Approved
	Revision	Revision Checked

Date of Issue:	: August 9, 2007
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Client;	Southern Company
Client Contract No:	TBO VINCENTED TO THE STATE OF T
Project	FGD WWTS
Location:	Crist Power Station - Pensacola, Florida
Project No.:	THO
Project Manager:	John Zuemie
Project Engineer:	Prakash Khanolkar

NOTES:

1. Responsibility designations are to be interpreted as follows:

SIEMENS S - Siemens Water Technologies

sorrow A

H - OPERATIONS

O - Owner or Others retained by Owner to execute a portion of the overall scope of work.

ALL - Each party is responsible for a given line item for his own scope to the extent applicable.

2. Following the responsibility designation above, a "1" or "2" may be shown. A "1" means the party identified has lead responsibility for that item. A "2" means the party has secondary or review responsibility. No number after the responsibility designation means the named party is solely responsible for the given line item.

TABLE OF CONTENTS:

A - CONTRACT EXECUTION/ADMINISTRATION/GENERAL CONDITIONS

D - MECHANICAL WORKS AND EQUIPMENT SUPPLY

G - TESTING AND COMMISSIONING

- B PROCESS DESIGN SCOPE
- E ELECTRICAL WORKS AND EQUIPMENT SUPPLY
- C CRALIBUILDING/FACILITY WORKS
- F OTHER SUPPLY ITEMS

		GEN	ACT AND ERAL ITIONS		WEERIN	G AND D	ELIVERA	BLES	7.1	JIPNIENT ALLED W			TSION OF NICAL TANCE	
	ACTIVITY	Included	Excluded	Technical Cata	Basio Dealgn	Detalled Design	Collyerable form	Exoluded	Ajpdane		Excluded	. Installation	Commissioning	REMARKS
A	CONTRACT EXECUTION/ADMINISTRATION/GENERAL CONDITIONS													
A.1	Administrative											<u> </u>		
A.1.1	Overall administration and coordination of the project for own scope	8, O								·		L		
A.1.2	Develop, Update, and Maintain Overall Detailed Project Schedule, Including Manpower Loading (input for own scope)	8,0												
A.1.3	Co-ordination with Other Contractors	0				1	1		1		1	1		
A.1.4	Project Execution Plan (for own scope)	8,0				 					1	1		
A.1.5	Daily Construction Reports	0					T	†						
A.1.6	Report of Manpower	0					 				1			
A.1.7	Monthly Progress Report (input for own scope)	8,0			T	1		1	1					
A.1.8	Bonds and Special Insurances	0			 	1								
A.2 A.2.1	Health and Safety				 		 		—		—			
A.2.1	Safety Program	0				1	1		1		—			
A22	Site Specific Safety Plan	0			1	1	1	1	†	1	†			
A.2.3	Site Safety Rep. and Weekly Safety Report	0			1					1	1			
A.2.4	Maintain equipped first-aid stations	0			<u> </u>	 	 							
A.2.5	Make arrangement with nearby hospital for emergencies	0				—	1			1	1			
A.2.6	Statutory notices, registers, inspections, etc.	0			1					T	1	1		
A.2.7	Safety equipment and protective clothing for own employees	0			T			1		1				
A.2.8	Safety equipment for work near water	0				1		1		1			1	
A.2.9	Fire extinguishers, etc. (temporary) for site offices	0			1			1		1	1			
A.2.10	Provide permanent safety/maintenance equipment, systems, materials, or placarding within bettery limits	0												
A.2.11	Ventilation to working areas (temporary and permanent)	0	 		 	†	†	 	†	 	 	1		
A.3	QAQC					 	 	1	1	 	1	—		
	QAQC Program (for own scope)	8.0	1		1	1	†	1	1	†	 	†	 	
A.3.2	Inspection and Test Plan (for own scope)	8,0			t	 	 	1	1	 	†	1	 	***************************************
A.3.3	Onsite QAQC Representative	0			 	1	 	1	1	 	 	t	 	
A.3.4	Shop and field fabrication procedures and qualifications (for own scope)	8,0			†	 	1	 	1	1	1	1	 	
A.3.5	Material and components certifications (for own scope)	† 	8			t	 	 	†	 	 	1	 	
A.3.6	Inspection, control and witness tests (for own scope of supply and Quality Plan)	s , o	_											

		CONTRACT AND GENERAL CONDITIONS		ENG	INEERIN	G AND DE	el ve rai	RI ES		IPMENT A			ISION or NICAL TANCE	
	ACTIVITY		Excluded	Technical Cata	Basic Design	Detailed Design	Deliverable Item	Excluded	Ajddng	installation	Excluded	Installation	Commissioning	REMARKS
A.3.7	Compile Manufacturer's Data Books (submit for review only). Covers entire EPC scope. Each party responsible for own scope items (for own scope)	S												
A.3.8	Manufacturer's Certificate of Origin (for own scope)		S											
A.3.9	Construction Turnover Package (including all testing records, QAVQC records, as- built drawings, etc.). Depending on scope split, can be submitted separately or in conjunction with Manufacturer's Data Books.	0												·
A:4	Permits and Environmental Compliance													
A.4.1	Environmental Impact Assessment	0												
A.4.2	Permits (Environmental)	0												
A.4.3	Permit Engineering	0		<u> </u>					<u> </u>	—		↓ —		
	Soil Erosion, Sedimentation, and Environmental Compliance Plan (after site turnover)	0												
	Payment of all permit fees by party responsible for obtaining that permit	0										1		
A.4.6	Obtain all Planning Approval from relevant authorities	0										1		
A.4.7	Obtain all Construction Licenses from relevant authorities	0	\perp			\vdash						↓		
A.4.8 A.4.9	Obtain Certificate of Fitness for use from relevant authorities	0							<u> </u>		├	1		
A.4.10	Obtain all utility authority approvals and permanent connections Obtain pertificates for lifting equipment	0									-	├ ──	 	
A.4.11	Compliance with all Environmental laws such as air pollution, water pollution, waster disposal, etc.	0												
A.4.12	Any other permits, licenses, approvals, certificates, not mentioned above	0	1		-				 			├	├	
	Site Establishment and Access				-					 	 	-		
	Mobilization	0		_					_		_	1		
	Construction Parking within 250 ft of the work site	0										1		
	Temp office facilities to be located within 250 ft or less of the battery limits	ō			1						1	1		
A.5.4	Provide access roads to battery limits.	0												
A.5.5	Maintain continuous free and clear access to battery limits	0												
7.0.0	Provide and maintain a secure material and equipment laydown area within 250 ft of the treatment plant battery limits	0										<u> </u>		
A.6	Site Security													
A.6.1	Full-time gatekeeper at main site entrance	0					L		<u> </u>			1		
A.6.2 A.6.3	Main Contractor's Signboards	0			<u> </u>		├ ──		<u> </u>		_	↓		
A.7	Clearances/badging Temporary Electricity and Utilities	0	_		├		├	—	<u> </u>	-	_	├ ─	-	
	Electrical Power Supply and Power Distribution as required (to battery limits for		1		<u> </u>		├	 		 	-	+		
	construction)	0			į.			l			ŀ		l	
	Electrical Power Distribution as required (within battery limits for construction)	0			1		\vdash	 			1	1		
	Temporary measures to maintain flows and other services at the works during	_			†		Ι	1						
	construction	0	L		<u> </u>		l _				<u> </u>	1		
	Temporary potable water installation to site offices	0	Ĺ											
	Temporary sewage drainage (Porta Johns)	٥										1		
	Removal at end of site works	0		<u> </u>	<u> </u>	<u> </u>	L	!	<u> </u>	<u> </u>		↓	<u> </u>	
	Costs for temporary power consumed on-site	0		Ь—	├	<u> </u>	<u> </u>	 	—			1	 -	
	Temporary Telephone Lines, Etc. Incoming lines, for phone and fax	-		├	-	├	<u> </u>	-	-	<u> </u>	-	∔	-	
	Telephone extensions	-	-		 	 	- 	1		1		+	 	
	Fax machines	-6	_	-	\vdash	1	\vdash	\vdash	-	\vdash		+	1	
	Call charges for phone services	8		_	1	—	 	 	1	\vdash	t	t —	1	
	Other Services for Site Establishment or Construction	<u> </u>	\vdash			\vdash	\vdash					t		
	Supervision of installation of supplied equipment	01, 82						:						Siemens to provide periodic technical assistance.
A.9.2	Temporary installation to facilitate installation or requirements	0	1			1						1		
A.9.3	Provide all necessary temporary facilities, manpower and materials for installation	o												
	Hand tools, power tools, lifting equipment, etc.	0				1			1	i		1		
A.9.5	Lifting lugs (for own scope)	0												
A.9.6	Lifting beam(s) for construction	0												

2

		GONTRACT AND GENERAL CONDITIONS		ENG	NEERING	G AND DE	LIVERAE	UES.		IPMENT A			ASION or NICAL TANCE		
	ACIMIN		Exeluded	Technical Date	Seele Design	Defailed Design	Deliverable Hem	Explided	Aldding	Installation	Excluded	Installation	Commissioning	REMARKS	
A.10	Materials Handling, Receipt, Protection and Touch-Up														
A.10.1	Receipt and unloading of equipment and materials	0										 			
A.10.2 A.10.3	Inspection of equipment/materials upon arrival on-site	0								L			-	***************************************	
A.10.4	Store, inventory and protect equipment/materials in storage Protect installed equipment	8	 									 	-		
A.10.5	Protect building, fitting and finishes	0	1									1	 		
A.10.6	Protection and/or restoration of existing installations and services to the extent required by the scope of work	0													
A.10,7	Touch-up of shop or field-applied protective coatings	0										1	-		
A.11	Temporary Site Accommodation														
A.11.1	Offices/Break Room/Lunch Room/Change Room	0													
A.12	Scaffold and Access											<u> </u>			
A.12.1	Temporary hole covers	0					L			L		<u> </u>			
A 12.2 A 12.3	Provide temporary and permanent safety barriers and maintain	0	 	 		ļ	 			ļI		 	1	······································	
A 12.4	Scaffolding required for installation, testing and commissioning Other scaffolding requirements	0	 				I			 		 	 		
A.13	Cleaning and Clearance Demobilization of Site	 	-										 		
A 13.1	Cleaning up general areas	0										 	l		
A.13.2	Carting nubbish to central point	ō										1		<u> </u>	
A.13.3	Cleaning offices, toilets, canteen, etc.	0													
A.13.4	Rubbish skips	0													
A.13.5	Clear Site - Accommodation	0													
A.13.6	Clear Site - Temporary works	0													
A.13.7 A.13.8	Clear Site - Plant and equipment	0	-										_		
A 14	Clean Structures for turnover Site Data	0		-						-			 		
A.14.1	Locate existing buried services	0	1									 	-		
A.14.2	Initial Site Survey Data	Ö	 									 	 		
A.14.3	Project Specific Site Survey	ō	1									1			
A.14.4	Initial Site Investigation/Soil Borings	0													
A 14.5	Additional Site Investigation/Soil Borings	0													
A.15	General System Deliverables														
A.15.1	Installation manuals/instructions (for own scope)		1				8					<u> </u>	<u> </u>		
A.15.2 B	Operating and maintenance manuals (for own scope)	 	 	— —			S			ļ	 		├		
B.1	PROCESS DESIGN SCOPE PE-Stamped Drawings		 			 		s		ļ ——	 		 		
B.2	PE-stamped Drawings Design relating to arees outside of the battery limits	\vdash	 	0	0	0		3		 	 	╂	 		
B.3	Identification of the tie-in points at battery limits	 	1	 		⊢				1		t	 		
B.4	Process Flow Diagram (PFD)	 	i	s	S	s	8			!	l	1	1		
B.5	Identify and Qualify Influent Waste Streams			ō											
B.6	Mass balance			8	S	S	S								
B.7	P&IDs for the new installations within the battery limits	ļ		S	8	8	S						1		
B.8	Location Drawing/Site Plan		_	0	0	0	0		ļ		 	<u> </u>	 		
B.9 B.10	Preliminary system general arrangement drawings (within battery limits)		 	S	8	8	8	 	 	 	 	 	┼		
B.11	Process control philosophy document (for own scope) Hydraulic profile within battery limits (for own scope)	 		S	S	S	8			 	 	+	+		
8.12	Define utility (air, water, electric, and chemicals) requirements within the battery			s	-	-	8			 		1	1		
B.13	limits (for own scope) Hazop Review of the Treatment Plant P&IDs within battery limits (for own scope)	 		01, 82		\vdash	01, 82			 	 	1			
c	CIVIL/BUILDING/FACILITY WORKS	 	 	_		 			 	├	 	+	 		
C.1	PE-Stamped Drawings	 	 			 	0			 	l		1		
C.2	Site clearing and grubbing	1				†			0	0	t	0	†	<u> </u>	
C.3	Site preparation								ō	0		Ō	<u> </u>		
C.4	Site grading/site preparation plan						0								
C.5	Excavations and earthworks								0	0		0			
C.6	On-site area for disposal of soil					L	L		0	L	l	I	L		

		GEN	ACT AND ERAL ITTIONS			G AND DI		BLES		JIPMENT ALLED W	AND TECH		/ISION or NICAL TANCE		
	ACTIVITY		Excluded	Technical Date	Besis Design	Detalled Design	Deliverable item	Excluded	Bupply	Manifestor	Exoluded	Installation	Commissioning	REMARKS	
C.7	Soil or site remediation								0						
C.8	Storm water drainage (to nearest site drainage structure)								0	0		0			
C.9	Site/battery limits dewatering								0	0		0			
C.10	Underground piping and services			8,0	0	0			0	0		0			
C.11	Underground cable systems, duct systems, trenches, draw pits, etc.			8,0	0	0			0	0		0	<u> </u>		
C.12 C.13	Grounding grid			0	0	0			0	0	 	0	ऻ		
C.14	Foundations, slabs, sumps, walls and other concrete structures	 	-	0	0	0			0	0	——	0		······································	
C.15	Hold-down bolt schedule Equipment dimensions and operating weights (for own scope)			8,0	0_	0		ļi	0	0	 	0	 		
C.16	Piting and Pite Cap Design and Supply (if necessary)	 	1	0	0	0		l	0	0	 	0	 		
V. 10	Building supply and erection (Including all lighting, insulation, HVAC, and other		-		<u> </u>	 			<u> </u>	 			┼		
C.17	required amenities.) Also includes any required electrical panels for building services and amenities.			0	0	0			٥	0		٥			
C.18	Building insulation			0	0	0			0	0	1	0	1		
C.19	Building fireproofing			0	0	0			0	0	1	٥			
C.20	Building fire detection system and alarm			0	0	0			0	0		0			
C.21	Building fire suppression (i.e. sprinkler) system			0	0	0			0	0		0			
C.22	Firewall at electrical control room			0	0	0			0	0		0			
C.23	Compliance with ADA within the treatment plant battery limits			0	0	0			0	0		0	1		
C.24	Domestic fittings, plumbing, sanitary installations, etc.		<u> </u>	0	O	0			0	0		0	<u> </u>		
C.25	Office furniture					ļ	<u></u>		0		<u> </u>	<u> </u>	ļ		
C.26 C.27	Control room desk and chair						 		0	ļ	ļ		ļ		
C.26	Lab Furniture Lab Equipment and Reagents	ļ	<u> </u>				 		0	 	ļ	-			
C.29	Laboratory instruments		├──		ļ		 		8	0	 	1 8			
C.30	Any required structural steel items not covered elsewhere in this document (including required protective coatings)			0	0	0			o	0	t	0			
C.31	Grouting and Sealants	 	 	0	†	1	 		0	0	1	0			
C.32	Protective Coatings (Non Process Applications)	T		0		T	†		0	0	T	0			
C.33	Protective Coatings (Process Applications)			0					0	0	T	0			
C.34	Roads inside the bettery limits (temporary)			0	0	0			0	0		0			
C.35	Roads inside the battery limits (permanent)			0	0	0			0	0		0			
	Car parking (permanent)		1	0	0	0			0	0		0	ļ		
	Finish grading	<u> </u>		0	0	0	!	<u> </u>	0	0		0	ļ		
C.38 C.39	Seeding of non-paved/gravel areas within battery limits	 		 -		<u> </u>	<u> </u>	<u> </u>	0	0		0	<u> </u>		
C.39 C.40	Landscaping Exercises (present and)		 		 	 	<u> </u>	 	0	0	ऻ	0	 		
C.40	Fencing (permanent) Access gates (permanent)	 	 			 	 	 	0	0	 	0	 		
D.71	MECHANICAL WORKS AND EQUIPMENT SUPPLY	 	 		 	 	 	 	I	 '	 	╅┷	 		
D.1	General	 	+	 	 	 	 	 	 	┼──	+	1	+		
	PE-Stamped Drawings	 	1		 	 	t	s	1 —	1	1	1-	1		
	Line list/schedule within battery limits (for own scope)						\$1,02							Siemens will supply this documentation to the extent it can. The final line list will have to be generated by the installing contractor who will determine the quantity of spool pieces to fabricate for any given piping run. Limited to pipe 1 diameter and above.	
D.1.3	Valve schedule (including minor in-line equipment items) within the battery limits (for own scope)						8								

		GEN	ACT AND ERAL ITIONS		INEERIN	S AND DE	LIVERA	BLES		IPMENT A		TECH	/ISION of NICAL TANCE		
	ACTIVITY	Included	Excluded	Tachmical Date	Basic Design	Detailed Design	Deliverable from	Excluded	Aidding	Installation	Exellided	installation	Commissioning	REMARKS	
D.1.4	Detailed system general arrangement drawings (within battery limits)			S, O	s	s	S							Siemens will issue the detailed system general arrangement drawings. Siemens will locate the equipment on the drawings and will layout the I/C piping. Southern Company will be responsible for providing the detailed building structure layout for integration with the equipment layout. Southern Company will also be responsible for all pipe racks and supports to be located and designed in accordance with the Siemens pipe routing.	
D.1.5	Interconnect Piping (Process) (within battery limits)			S1, O2	S1, O2	\$1, O2			8,0	0		o		Siemens will provide routing of all piping 1" diameter and greater and will supply the same in loose bulk quartities. Others (not Siemens) will be responsible for the design, fabrication, and installation of all piping spools 1" diameter and greater from the materials supplied by Siemens and the supply, design, and installation of piping/fubing less than 1" diameter which shall be field routed.	
D.1.6	Interconnect Piping (Chemical Feeds) (within battery limits)	Active Control of the		S1, O2	S1, O2	\$1, 02		TOP AND TO THE PARTY OF THE PAR	S, O	0		0		Siemens will provide routing of all piping 1" diameter and greater and will supply the same in loose bulk quantities. Others (not Siemens) will be responsible for the design, fabrication, and installation of all piping spools 1" diameter and greater from the materials supplied by Siemens and the supply, design, and installation of piping/tubing less than 1" diameter which shall be field routed.	
D.1.7	Utilities Piping (service air, water, natural gas, electric, and sampling, etc.)			l o	0	0			0	0		•			
D.1.8	(outside of battery limits to tie-in points) Utilities Piping (service air, water, natural gas, efectric, and sampling, etc.) (within battery limits to tie-in points)			\$1, 02	S1, O2	\$1,02			s, o	o		o		Siemens will provide routing of all piping 1" diameter and greater and will supply the same in toose bulk quantities. Others (not Siemens) will be responsible for the design, fabrication, and installation of all piping spools 1" diameter and greater from the materials supplied by Siemens and the supply, design, and installation of piping/flubing less than 1" diameter which shall be field routed.	
D.1.9 D.1.10	Piping/electrical outside battery limits Stress analysis of piping (if required)	<u> </u>	!	0	0	0		<u> </u>	<u> </u>	0		0	1		
	3D Microstation drawings for above ground process pipe work	 	 	- S	8	S	S					1	 		
D.1.12	Pipe support structures			٥	ō	0			0	0		0			
D.1.13	Tank and Pipe Insulation (freeze protection)			0	0	0			0	0		0			
D.1.14	Tank and Pipe insulation (personal protection)			0	0	0			0	0		. 0	1		
D.1.15 D.1.16	Above-ground pipe painting/coatings (including pipe support structures) Line mandings/labeling	├		0	 -	 			0	0		0	 		
D.1.17	Error insuring garactering Application of Siemens Codes and Standards (for standard packaged equipment)			s								Ľ			
D.1.18	Specifications for inquiry and selection of equipment (for own scope of supply)			S1, O2											
D.1.19	Manufacturing drawings (for own scope of supply)	₩-	1	—	1		<u> </u>	S		_	├	₩	—	Ciamago will greech for all piping alves 49 diameter	
D.1.20	ALL Off-Skid Manual Valves (except Manual Valves with Limit Switches)			s					8, 0	0		٥		Siemens will supply for all piping sizes 1" diameter and greater; Others will supply for all piping sizes less than 1" diameter.	
D.1.21	ALL On-Skid Manual Valves			s					8	S1, O2		0		Manual valves on skidded equipment will be pre- installed.	

		GEN	ACT AND ERAL ITIONS	ENG	NEERIN	G AND D	ELIVERA	BLES		JIPMENT ALLED W		TECH	/ISION or INICAL ITANCE	
	ACTINITY	Pepnjouj	Exoluded	Technical Date	Basto Design	Defailed Design	Deliverable Item	Excluded	Ajdding	Installation	Excluded	Installation	Commissioning	REMARIS
D.1.22	ALL Off-Skild Automatic Valves and Manual Valves with Limit Switches			s					s	0		0		Off-skid automatic valves and manual valves with limit switches will be shipped loose for complete installation by Others (not Siemens).
D.1.23	ALL On-Skid Automatic Valves			8					8	S1, Q2		0		Automatic valves on skidded equipment will be pre installed.
D.1.24	ALL Off-Skid Instruments			s					8	0		0		Off-skid instruments will be shipped loose for complete installation by Others (not Siemens).
D.1.25	ALL, On-Skid Instruments			8					s	\$1,02		0		Instruments on skidded equipment will be pre- installed.
D.1.26	ALL Steel Tank Coatings (except as noted below)			8.0					0	0		0		
D.1.27	Nameplates and Tagging (for own scope)				 	—	†		S. O	1 -		T -	1	
D.1.28	Miscellaneous installation materials for equipment including but not limited to: insulation, cladding, bolts, nuts, washers, paskets, clamps, shims								0	0		0		
D.1.29	Termination flanges (at tie-in points)								8,0	0		0	<u> </u>	included to the extent required to install Siemens- supplied interconnecting piping.
D.1.30	Piping special items including: strainers/filters (temporary and permanent), sight glasses, flexible hoses and connections								0	0		0		
D.1.31	Instrument air manifold and termination flances					1	1	1	0	0		0	1	
D.1.32	Utilities Stations					—			0	0		0	1	
D.1.33	Eyewash Stations/Safety Showers			S		 	 		8	Ö		0	1	
D.1.34	Cathodic Protection	T		ō	0	0	T	1	ō	O		Ö		
D.1.35	Preparation, preservation and packing of deliverables for shipment to site (for own scope)								s, o					
D.1.36	Delivery to Site (for own scope)					1	1	1	S, O	1			1	
D.1,37	Final pump alignments at site (skidded and non-skidded pumps)						1		0	0		0		
D.2	Detailed Supply of Equipment (Per P&O Sheets)													
D.2.1	(thems not specifically delineated within this section are covered by the general line items above)													
D.2.2	P&ID D-603, Sheet 1					1		1		1				
D.2.2.1	Reaction Tank 1A (FRP)			S	S	8	1	1	S	0		0	T	
D.2.2.2	Reaction Tank 1A Mixer			8	S	S	T	1	S	0		0		
D.2.2.3	Reaction Tank 1A Mixer Support/Access Bridge			8, O	0	0			0	0		0	1	
	Reaction Tank 1A Elevated Stand			5,0	0	0			0	0		0	T	
D.2.3	(Left Intentionally Blank)													
D.2.4	P&ID D-603, Sheet 2													
	Reaction Tank 18 (FRP)			S	S	S			S	0		0		
D.2.4.2	Reaction Tank 1B Mixer			8	8	8			8	0		0		
D.2.4.3	Reaction Tank 1B Mixer Support/Access Bridge			5,0	0	0		<u> </u>	0	0	<u> </u>	0	<u> </u>	
	Reaction Tank 1B Elevated Stand	ļ		8,0	0	0		ļ	0	0		0	 	
D.2.5	P&ID D-603, Sheet 3					<u> </u>	 			<u> </u>		<u> </u>		
	Reaction Tank 2A (FRP)	L		S	8	8	<u> </u>	1	8	0	L	0	 	
	Reaction Tank 2A Mixer			8	8	8	╄	↓	8	0	<u> </u>	1 0		
D.2.5.4	Reaction Tank 2A Mixer Support/Access Bridge Reaction Tank 2A Elevated Stand	ļ	 	S, O	0	0		 	9	0	 	0	 	
D.2.6	P&ID D-603, Sheet 4	 	 	S, 0	0	0	+		0	0	 	0	 	
_	Reaction Tank 2B (FRP)	 	t	8	s	8	 	 	8	0	 	۱ .	+	
	Reaction Tank 2B Mixer		1	ŝ	S	s	 	 	s	1 0		1 6	+	
	Reaction Tank 2B Mixer Support/Access Bridge	—	1	8,0	8	1 8	 	 	- 6	l ŏ	t	1 5	+-	
D.2.6.4	Reaction Tank 2B Elevated Stand		t	8.0	Ö	1 6	1	 	0	1 5		1 0	1	
	P&ID D-603, Sheet 6				 	 	1	1	i –	1 -		T	1	
	Solids Contact Clarifier Tank A (City. 1) - Includes Studge Sump - Steel			S	s	s			s	o		۰		Siemens will provide tank steel in knocked-down condition with the exterior surfaces primed only. The interior surfaces cannot be shop-primed as the kinds of linings recommended require field surface preparation and application of primer coatings. Tank to be field-erected and coated by installing contractor.

D.2.7.2 Solids Contact Clarifier - Bridge, Internals (draft tube, reaction well, torque cage, rake arms.). Bridge supplied fully finished costed. Internals supplied unprimed and uncoated (field applied preparation and coatings required). D.2.7.3 Radial effluent launders with adjustable weirs (nylon or FRP fasteners) Effluent nozzle, influent ploing, studge suction piping, internal concrete fill/orout.	рэрдірці	Exelution	co Technical Date	o Bede Design	Editor Selling	Deliverable item	Excluded	Aldding	materilation	Explided	Installation	guinole	REMARKS
D.2.7.2 rake arms.). Bridge supplied fully finished costed. Internals supplied unprimed and uncoated (field applied preparation and coatings required). D.2.7.3 Radial effluent launders with adjustable weirs (nylon or FRP fasteners)			S	S			F ME STONE	7.7	.	gg.		Commissioning	
					8			s	0		0		
D.2.7.4 wire mesh, 360 degree studge sump to concrete seal, 360 degree tank to concrete seal, etc.)			\$ 8,0	0	0			0	0		0		
D.2.7.5 Recirculation Drive/VFD D.2.7.6 Rake Arm Drive			S	S 8	S			8 5	0		0		
D.2.7.7 Rake Arm Lift Drive D.2.7.8 Sample Sink D.2.7.9 Polymer Injection Quill			S & S	S	8			\$ \$	0		000		
D28 PSID D-603, Sheet 6			-		L.						Ľ		
D.2.8.1 Solids Contact Clarifier Tank B (City. 1) - Includes Sludge Sump - Steel		nd residue c	s , o	o	0		3	0	0	on w spr	0		Siemens will provide tank steel in knocked-down condition with the extenor surfaces primed only. The interior surfaces cannot be shop-primed as the kinds of linings recommended require field surface preparation and application of primer coatings. Tank to be field-erected and coated by installing contractor.
Solids Contact Clarifier - Bridge, Internals (draft tube, reaction well, torque cage, D.2.6.2 rake arms.). Bridge supplied fully finished coated. Internals supplied unprimed and uncoated (field applied preparation and coatings required).			8	s	8			8	0		0		
D.2.8.3 Radial effluent launders with adjustable weirs (nylon or FRP fasteners)			S	8	S			8	0		0		
E:ffluent nozzle, influent piping, sludge suction piping, internal concrete fill/grout, D.2.8.4 wire mesh, 360 degree sludge sump to concrete seal, 360 degree tank to concrete seal, etc.)			8, 0	0	0			0	0		0		
D.2.8.5 Recirculation Drive/VFD			S	S	8			S	0		0		
D.2.8.6 Rake Arm Drive D.2.8.7 Rake Arm Lift Drive			S	8	S	 		S	0		0		
D.2.8.8 Sample Sink			s	-	-			S	0		ö		
D.2.8.9 Polymer Injection Quiti			S	S	S	!		S	O		0		
D.2.9 P&ID D-603, Sheet 7													
D.2.9.1 Continuous Backwash Filters A/B/C			S	s	8	ļ		8	0		0		
D.2.9.2 Continuous Backwash Filters A/B/C Solenoid Panels (Qty. 3) D.2.9.3 Hydrochloric Acid Injection Quill			S	8	S	 		S	0		0		Shipped loose for field installation.
D.2.10 P&D D-603, Sheet 8		-	<u> </u>	8	3	 		-			l ∽		
D.2.10.1 Treated Wastewater Sump (Concrete)			S, O	0	0	 	\vdash	0	0		0		
D.2.10.2 Treated Wastewater Sump Pumps A/B			S	8	S			8	ō		Ö		
D.2.11 P&ID D-603, Sheet 9													
D.2.11.1 Sludge Recycle/Sludge Transfer Pumps A/B/C Skid			S	8	S	ļ		Ø	0		0	ļ	
D.2.12 P&ID D-603, Sheet 10 D.2.12.1 Studge Holding Tank (FRP)			8	s	s	}	 	s	-		-	 	
D.2.12.1 Studge Holding Tank (PRP)			S	S	S	 	 	S	0		0	 	
D.2.12.3 Sludge Holding Tank Mixer Support/Access Bridge	—		8,0	0	1 5	 	1	ö	ö		Ö	 	
D.2.13 P&ID D-603, Sheet 11													
D.2.13.1 Filter Press Feed Pumps A/B Skid			S	S	8	1		S	0		0		
D.2.14 PSID D-603, Sheet 12													
D.2.14.1 Filter Presses A/B	L	 	S	S	8			S	0		0	 	
D.2.15 P&ID D-603, Sheet 13 D.2.16.1 Filtrate Supp. (Congrete)				┝	 	ļ	\vdash	-			-	 	
D.2.15.1 Filtrate Sump (Concrete) D.2.15.2 Filtrate Sump Mixer		 	S, O S	S	S	 		8	0	 	8	 	······
D.2.15.3 Filtrate Sump Pumps A/B		 	3	8	S	 	 	8	0		1 0	 	
D.2.16 P&D D-603, Sheet 14			ا ا	⊢°	 		 			 	 "	 	
D.2.16.1 Lime Silo Feed System (Silo, Slurry Tank, Slurry Mixer, Feed Pump, Feeder, Bin Activator, Piping, Valves, Instruments) D.2.17 (Left Intentionally Blank)			S	s	8			8	0		0		Partially Shop Assembled/Partially Field Assembled

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ACTIVITY To To To To To To To T	O O - freshilation	
D.2.18.1 Sulfide Feed Pumps A/B/C Skid S S S S O D.2.18.2 Sulfide Totes O O D.2.19.2 Sulfide Totes O O D.2.19.3 Sheet 16 O O D.2.19.1 Ferric Chloride Feed Pumps A/B/C Skid S S S S S O	0	
D.2.18.2 Sutfide Totes O O D D.2.19 P&ID D-603, Sheet 16 D.2.19.1 Ferric Chloride Feed Pumps A/B/C Skid S S S S O	0	
D.2.19 P&ID D-603, Sheet 16 D.2.19.1 Ferric Chloride Feed Pumps A/B/C Skid S S S S O	0	
D.2.19.1 Ferric Chloride Feed Pumps A/B/C Skid S S S S O		
	0	
D.220 P&ID D-603, Sheet 17		
D.2.20.1 Polymer Blending Units/Feed Pumps A/B/C Skid S S S S O	0	
D.2.20.2 Polymer Totes O O	0	
D.2.20.3 Backflow Preventor 0 0 0 0 0	<u> </u>	
D.221 P&ID D-603, Sheet 18 D.221.1 Hydrochloric Acid Feed Pumps A/B Skid S S S S O	0	
D.2.21.1 Hydrochloric Acid Telea Pumps AVB Skid 8 8 5 5 0 0 0 0	0	
Construct of Circumstand Walfaurus Christman ste and identified		· · · · · · · · · · · · · · · · · · ·
D.3 above	1	
D.3.1 Interconnecting Walkways and Stairs (including protective coatings for these OOO S,OO	0	Siemens supply is limited to furnishing an access bridge across the three (3) gravity filters and one (1) ladder for its access.
D.3.2 Access Stairway and Access Ladders to Provide Access to All Equipment OOO St. DO	0	Siemens supply is limited to furnishing one (1) stainway for access to the clarifiers.
E ELECTRICAL WORKS AND EQUIPMENT SUPPLY		
E.1 PE-Stamped Drawings S		
E.2 Motor list (for own scope) S S S S S S S S S S S S S S S S S S S		
E.3 Instrument List (for own scope) S S S S S S S S S S S S S S S S S S S		
E.5 Motor and Instrument Location Drawings S S S S		
E.6 Off-skid instrument wiring (including tray/supports) between equipment items O O O O O	0	
E.7 Instrument wining between local panel(s) and PLC/DCS Panel including 0 0 0 0	О	
E.8 Instrument air supply tubing and fittings including supports (as required) O O O O	0	
E.9 Instrument mountings, stands and supports (for field connections) O O O O O	0	
E.10 Instrument process hook-ups OOOO E.11 Single line diagrams/construction single lines (for own scope) S, OOOO		
E. 12 Field Wining Schedule (for own scope) S S S S		****
Interest and the state of the s		
E.13 Interconnecting causes cause analys, cause tray supports, conduit, and punction 0 0 0 0	0	
E.14 Cable schedules and bulk material take offs O O O O	0	
E.15 Local disconnects. 0 0 0 8 0 0	0	
E.16 Application of codes and standards (for own scope) 8, 0		
E.17 Motor Control Centers S, O O O O O O O O O O O O O O O O O O	0	
E.19 460V Load Centers/Switchgear 0 0 0 0	- 	
E. 20 Distribution and Breaker Panels and Transformers 0 0 0 0 0	- - 	
E.21 Detailed Control philosophy (SOO)		
E 22 Compilation of overall I/O list (for own scope)		
E.23 Operator Interface Workstation (for own scope of work) SSSSSO	0	
E.24 UPS / Battery Chargers (For workstations only) 0 0 0 0	0	
E.25 Operator Interface Software Development (for own scope of supply) S S S S S S S S S S S S S S S S S S S	<u>s</u>	
E.26 PLC software development (for own scope of supply) 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8	
E.27 Sufficient information to permit DCS configuration (Owner's interface) S E.28 Software and Licenses S		
E.29 Hardware (media converters) between equipment PLC and the Owner's network 0 0 0 0	0	
E.30 Tank and Pipe Heat Tracing (including Panels and Transformers) O O O O	0	
E.31 Lightning protection O O O O	ō	
E.32 Intruder alarm 0 0 0 0 0	0	
E.33 Telephone System 0 0 0 0 0	0	

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		GEN	ACT AND ERAL ITIONS	ENG	MEERIN	G AND DI	ELVERAL	BLES		IPMENT A		SUPERV TECH ASSIS			
	ACTIVITY	Pepriori	Excluded	Tachnical Data	Besic Design	Detailed Design	Deliverable Item	Exeluted	Alddne	Installation	peprijoxa	Installation	Commissioning	REMARKS	
	Bidg. Telephone Panei/Hardware			0	0	0			0	0		0			
	Paging System			0	0	0		-	0	0		0			
-	Plant Paging System Panel/Hardware CCTV systems	 		0	8	8		\vdash	ö	0		1 %			
	Security access systems			ō	ō	 0			ö	ō		ō			
	Plant area lighting			0	0	0			0	0		0			
E.40	Lighting Panels and Transformers			0	0	0			٥	0		0			
	VFDs			8,0	0	0			0	0		0			
	Control Panels (for own scope)			S	8	S		8	S	0		0	H		
	Local gauge boards Grounding (for own scope) (i.e.) Siemens equipment to have grounding lugs; all	 			-	1					-	1	\vdash		
	other grounding components/installation by Contractor)				1	l			S, O	0	ł	٥			
E.45	Analyzer shelters							S							
E.46	Nameplates and Tagging (for own scope)								S, O						
F	OTHER SUPPLY ITEMS														
	Spare Parts	ļ			<u> </u>	1	_	 				-			
	Spare Parts List Capital spare parts (unless noted otherwise in the bid request documents)				-	 	s		_	<u> </u>	s	}			
	Commissioning spare parts (for own scope)					 	—	f	8		-	1			
	Spare parts for normal operation		1			1					s	1			
	Chemicals, Lubricants, Other														
F.2.1	Initial Supply														
F.2.1.1	Bulk chemicals						L		0	0		0			
	Chemical totes	<u> </u>				├	├──		0	0	├	8	<u> </u>		
	Lubricants and greases Biomaes		\vdash	(NOT	APPLIC	ABLE TO	I THIS SYS	RTEM	· ·	0_	s, o	 	_		
	Consumables			(110)	1	T	11,,,,,,	<u> </u>	0	0	- 3, 5	0			
	Follow-On Supply (Including during testing and commissioning)					1									
F.2.2.1	Bulk chemicals								0	0		0			
	Chemical totes		1			<u> </u>			٥	9	⊢ —	0			
F.2.2.3 F.2.2.4	Lubricants and greases Biomass	-	1	(NOT	ADDITO	ABLE TO	THIS SY	RTEM	0	0	8,0	<u> </u>			
	Consumables	 	1	(NO:	AFFLIC	MBLE IO	11110 011	3151111	0	0	3,0	0			
G	TESTING, COMMISSIONING, AND START-UP					 				Ť			1		
	Design of any temporary pipe work, connections, or other facilities as may be				1	Γ'' .									
	required in order to successfully test and commissioning the equipment supplied				0	0	1		0	0	1	0			
0.10	(for own scope of supply)	! —	<u> </u>			⊢	ļ				├	1			
G.1.2 G.1.3	Site laboratory for water quality if applicable to own scope Supply Qualified Operators	-			-	\vdash			8	 	-	+-			
G.1.4	Training Manual (Training Power Point Presentation)	1			1	1	s	1	۲	 	\vdash	1	 		
G.1.5	Classroom Training					L	s								
G,1.6	Hands-On Training						8								
	Pre-Commissioning Hydraulic Testing											_	 _		
	Static hydraulic testing of all water retaining structures	├				1		├	0	 	- —	1-	0		
G.2.2	Hydraulic pressure testing of all pipe work (Including preparation of test packages)]			0				0		
G.2.3	Hydraulic pressure testing of storage tanks and other vessels (including preparation of test packages)								0				0		
	Supply of water for testing		-						0	<u> </u>		╀	1 —		
G.2.5	Supply of power for testing	-	\vdash		├	\vdash	<u> </u>		0			₩	 		
G.2.6 G.2.7	Making a point of disposal for testing water available Transfer of test waters to battery limits and from battery limits to disposal point								0			1	\vdash		
	Transfer of tool verteen within botton, limits on accommon	-				1	-	₩	0	-	 	1	1	-	
	Transfer of test waters within battery limits as necessary Documentation of all test results	1			1	+	0	 	 	-	 	1	 		
	Pre-Commissioning Dry Testing - M&E Equipment	-			1	 	۱Ť			 	1		 		
	Supply of power for testing					<u> </u>			0						

		GEN	ACT AND ERAL ITIONS			g AND DI		BLES		UPMENT		TECH	/ISION or INICAL ITANCE	
	ACTIVITY	Behilded	Excluded	Technical Date	Besig Design	Detailed Design	Deliverable Bern	Excluded	Supply	Installation.	Excluded	Installation	Commissioning	REMARKS
G.3.2	Dry testing procedures for equipment				3.30		8.0	1						
G.3.3	Labor for the dry testing of equipment	 						 	0				01, 82	
G.3.4	Production of dry testing records	 				† — —	S. 0						1	
G.3.5	Any other dry testing requirement	 				1	8.0						1	
G.4	Commissioning Wet Testing - M&E Equipment	t				r							1	
G.4.1	Supply of water for testing	 				T		t	0					
G.4.2	Supply of power for testing	$\overline{}$							o					
G.4.3	Making a point of disposal for testing water available	1							ō					
G.4.4	Transfer of test waters to battery limits and from battery limits to disposal point								0				0	
G.4.5	Transfer of test waters within battery limits as necessary	 				 			0				51, 02	
G.4.6	Wet testing procedures for equipment (for own scope)	—					S							***************************************
G.4.7	Labor for wet testing of equipment (for own scope)	 				——	8	—						
G.4.8	Production of wet testing records for equipment (for own scope)	 						1						
G.5	PLANT START-UP AND PERFORMANCE TESTING	 						t					1	.,,
G.5.1	Supply of process wastewater for start-up and testing	1				1		T	0				1	
G.5.2	Supply of power for start-up and testing	 				†			0				1	
G.5.3	Making a point of disposal for final in-spec. effluent available	†	 			 		t	ō				1	***************************************
G.5.4	Making a point of disposal for out of spec, effluent available	1				†			0				1	
G.5.5	Transfer of test waters to battery limits					1			ō				0	
G.5.6	Transfer of test waters within battery limits as necessary	†	—			 			0				\$1,02	
G.5,7	Transfer of in-spec. effluent to disposal point	t				†	T	T	0			T	0	
G.5.8	Transfer of out-of-spec. effluent to disposal point	1				1		1	ò			Ī	0	
G.5.9	Start-up procedures (for own scope)	†				—	S						1	
G.5.10	Labor and operation of the treatment plant during start-up	l				1		<u> </u>	0				\$1,02	
G.5.11	Labor and operation of the treatment plant during any biological acclimation period(s)										s, o			
G.5.12	Compilation of the process start-up records (for own scope)	 			l	t	8	1					T	
	Performance testing procedures (for own scope)	1				1	s	1						
G.5.14	Labor and operation of the treatment plant during performance testing				 				0				\$1,02	
G.5.15	Sampling and analysis required to validate the treated water quality at the inlet and outlet battery limits								8,0				1	
h		 		ļ	 	├ ──	<u> </u>	├	<u> </u>	ļ	ļ	 	 	
H.1.1	OPERATIONS	 			 	-		 				 	+	
UT. 1.1	Commences Upon Completion of Installation	L	1	L	<u> </u>	<u> </u>	<u> </u>	<u> </u>	0		L	<u> </u>	10	L

SIEMENS

SUGGESTED COATINGS - FGD APPLICATIONS TANKS, SUMPS, TRENCHES AND CHEMICAL AREA COATINGS

Tank Name	% TSS	Ha	Type Construction	Agitation	Cellcote Lining/Coating
Field Erect Carbon Steel Tanks	3-6	5.5	Steel	Yes	 Primer: 680 Primer Field Applied Basecoat: 505 Coroline Lining (with Fiberglass Mat Reinforcement) Topcoat: 505AR Coroline (minimum total system DFT 125 mils, excluding wearpad) Wearpad: 505AR Coroline (additional 125 mils DFT)
Clarifier and Sludge Holding Tanks	10-18	8.5	Steel Tank and Internals Grouted Concrete Floor	Rake Arms	Lining on Floor and Wall to 12 ft above Concrete Floor High Point: Primer: 680 Primer Basecoat: 68AR Lining (with Fiberglass Mat Reinforcement) Topcoat: 505AR Coroline (minimum total system DFT 125 mils) Concrete to Steel Joints: Ceilcote Hinge Joint Lining on Wall from 12 ft above Concrete Floor High Point and Higher and All Submerged Clarifier Internals: Primer: 680 Primer Basecoat: 662 Flakeline Intermediate coat: 662AR Flakeline Topcoat: 662AR Flakeline (minimum total system DFT 55 mils)
Filtrate Sump	15	8.5	Concrete	Yes	 Primer: 680 Primer/610 Ceilpatch Scratch Coat Basecoat: 68AR Lining (with Fiberglass Mat Reinforcement) Topcoat: 505AR Coroline (minimum total system DFT 125 mils, excluding wearpad) Wearpad: 505AR Coroline (additional 125 mils DFT)
Building Process Water Trenches	Varies	Varies	Concrete	No	 Primer: 680 Primer/610 Ceilpatch Scratch Coat Basecoat: 68AR Lining (with Fiberglass Mat Reinforcement) Topcoat: 662AR Flakeline (minimum total system DFT 90 mils)
HCl and Caustic Tank Secondary Containment (HCl ~30%) (Caustic ~50%)	N/A	2-10	Concrete	No	Primer: 380 Primer/310 Ceilpatch Scratch Coat Basecoat: 242 Flakeline Topcoat: 242 Flakeline (minimum total system DFT 32 mils) Concrete Floor to Wall Juncture: Ceilcote Hinge Joint
Ferric Chloride Tank Secondary Containment (Ferric Chloride 37%)	N/A	~7	Concrete	No	 Primer: 380 Primer/310 Ceilpatch Scratch Coat Basecoat: 242 Flakeline Topcoat: 242 Flakeline (minimum total system DFT 32 mils) Concrete Floor to Wall Juncture: Ceilcote Hinge Joint

SIEMENS

consequences and account	readed	49 A 49	# Type, # #	1500000	
Tank Name	* X TSS	pH	Construction		Cellcote Lining/Coating
HCI Pump Skid Curbed Area	N/A	2-10	Concrete	No	Primer: 380 Primer/310 Ceilpatch Scratch Coat
(HCI ~30%)				Ì	Basecoat: 242 Flakeline
·				1	■ Topcoat: 242 Flakeline (minimum total system DFT 32 mils)
					Concrete Floor to Wall Juncture: Ceilcote EJ-3
Ferric Chloride Pump Skid	N/A	~7	Concrete	No	Primer: 380 Primer/310 Ceilpatch Scratch Coat
Curbed Area					Basecoat: 242 Flakeline
(Ferric Chloride 37%)					Topcoat: 242 Flakeline (minimum total system DFT 32 mils)
(1 Sillo Sillollaco Sillollaco	,			1	Concrete Floor to Wall Juncture: Ceilcote EJ-3
Polymer and Sulfide Curbed	N/A	~7	Concrete	No	Primer: 380 Primer/310 Ceilpatch Scratch Coat
Area (Both relatively non-		·		112	Basecoat: 242 Flakeline
aggressive)				1	Topcoat: 242 Flakeline (minimum total system DFT 32 mils)
aggiossive		÷	İ		Concrete Floor to Wall Juncture: Ceilcote EJ-3
Lime Slurry Curbed Area	N/A	~10	Concrete	No	Primer: 380 Primer/310 Ceilpatch Scratch Coat
(Lime Slumy ~10%)	10,		Contacto	}	Basecoat: 242 Flakeline
(Line oldery 1070)		1			Topcoat: 242 Flakeline (minimum total system DFT 32 mils)
·					Concrete Floor to Wall Juricture: Ceilcote EJ-3
Truck Unloading Pad	N/A	2-10	Concrete	No	Primer: 380 Primer/310 Ceilpatch Scratch Coat
Huck Officacing Fac	13//	2 10	Conaca	1	Basecoat: 6640AR Ceilcrete Lining (with Fiberglass Mat Reinforcement)
				1	Topcoat: 6640AR Ceilcrete (minimum total system DFT 125 mils)
ļ	1	İ	}		Concrete Floor to Wall Juncture: Ceilcote EJ-3
Truck Unloading Pad	N/A	2-10	Concrete	No	Primer: 380 Primer/310 Ceilpatch Scratch Coat
	INA	2-10	CONGER	140	Basecoat: 242MR Flakeline Lining (with Fiberglass Mat Reinforcement)
Containment Sump					Topcoat: 242 Flakeline (minimum total system DFT 80 mils)
					Concrete Floor to Wall Juncture: Ceilcote Hinge Joint
	<u> </u>	<u>L., </u>	1	<u></u>	1 - Condete i looi to valii suriodite. Collode i linge sonit

Ceilcote Contact Information:

Frank Bova - Regional Manager Ceilcote USA

Office: 877-234-5546
Cell: 330-289-7379
e-mail: frank.bova@ceilcotecc.com
website: www.ceilcotecc.com

INQUIRY No.

PROPOSAL

FORM Attachment I

Aquatech International Corporation, One Four Coins Drive Canonsburg PA 15317

EQUIPMENT ONLY WASTEWATER TREATMENT SYSTEM

FOR SOUTHERN COMPANY

PLANT CRIST SCRUBBER PROJECT of GULF POWER COMPANY

Southern Company 42 Inverness Center Parkway Bin # B414 Birmingham, AL 35242

1.0 SCOPE

in accordance with your inquiry No. inviting proposals for Wastawater Treatment system for the referenced generating plant and subject to all conditions and requirements of your Specification, all related attachments and accompanying documents in connection therewith, we propose to design, fabricate, deliver, and commission the equipment for the prices quoted herein. Pricing does not include state sales/use tax.

"Option" is understood to be Purchaser's option.

2.0 PRICING

2345

9

Note: All pricing F.O.B. plant site; State sales/use tax is excluded

2.4 Proposal 4 - Pilver water as makeup, discharge to river

Fer scope of tupply as described in the Specifications and Vender Proposal

2,4,4	Price for providing equipment	\$	
2.4.	Price for start up-secistance	*	
3,4,2	Price per day for additional field teatwicel support	*	
2,4,4	Maximum freight to plant site (All freight to be included here)-	\$	
2.1.	Price for erection of clarifiers (Option)	, *	
2,1.0	Price for low local sheer agitators (Option)	\$	
	(where beneficial for process chemistry)		
2,1,7	Price for esiglescette neutralization equipment (Option)	\$	
2.2	Proposal 31 – Recisim water as makeup, discharge to deep wells		
	For scope of supply as described in the Specifications and Vendor Proposal		
2.2.	Price for providing equipment	\$	*
2.2.	Price for start up assistance	8	
2.2.3	Price per day for additional field technical support	3	
2.2.4	Maximum freight to plant site (All freight to be included here)	\$	
2.2.	Price for erection of clarifiers (Option)	\$	
2.2.	Price for low local shear agitators (Option) (where beneficial for process chemistry)	\$	
2.2.	Price for acid/caustic neutralization equipment (Option)	\$	2 000 € 1800 €
2.2.1	Price for items which increase filter cress automation, minimize, maintenance, or alert DCS operators there is trouble with the presses (Option)	Total Legisland Comment	entre de la companya de la companya de la companya de la companya de la companya de la companya de la companya
201	Drine for filter names rinth someth strategy (Capturi)	\$.akb.:	

3.0	ESCA	AT	

:	3.1	Material prices quoted are:	Discuss. % firm
			Discuss % escalated
;	3.2	For escalated prices, the following s	half apply:
	3.2.1	Indices to be used (include percenta	iges applicable to materials, labor, etc.)
		In previous contracts we have used negotiated and difference in bought	published indicies for material per pound included in our scope, labor escalation per contract out items above \$50,000 value. We are open to discussion of this point.
	3.2.2	Starting date of escalation	9/1/2007
	3.2.3	Base index Value(s) and base monti	h 9/1/2607
	3.2.4	Ending date of escalation	9/1/2009
	3.2.5	Limits of escalation	Discuss
	3.2.6	Method of calculating escalation	Discuss
4.0		ACCEPTANCE	
		Prices quoted shall be valid for ninet	y (90) days after proposal date.
5.0		QUALITY ASSURANCE	
		In addition to the Quality Assurance furnish the following additional documents	Documentation required by Paragraph 8.0 of the General Specification, we will mentation which is generated as a result of our Quality Assurance Program.
		Please reference Section IV of Our p	oposal for our Quality Plan

6.0 DESCRIPTIVE DATA AND ENGINEERING INFORMATION

The following descriptive information and design data are furnished in connection with the equipment and materials offered with this Proposal.

6.1 Utility Consumption Data - Plant Crist

Proposal 1

instrument air (also use for service air)	peal	k scfm @ psi	40 average scfm @ psi
			infrequent intermittent as
Potable water	72 реві	k gpm (2) psi	needed average gpm @ psi
Service water	82 peal	k gom @ipsi	25 average gpm @ psi
Electricity	5671 peal	(kW*	3637 average kW/day

*does not include water heater

Proposel 2		
instrument air (also use for service sir)	pask esim () pei	evenage sefm @ pei
Polable water	peak gpm (8 pal	average gpm @ pai
Service water	peak gpm (8 pc)	gverage gpm 🚯 pei
Electricity	peak k///	everage kW//day

6,2 Chemical Consumption Data - Plant Crist

8.2.1 Chemical Description and Estimated Cost

Proposal 1	Technical Grade
Coagulant (as 40% ferric chloride)	40% FeCi3 solution
Polymer	Anionic Polymer
Dewatering Polymer (if needed)	
Sulfuric Acid (93%)	Technical Grade 93% Sulfurio Acid
Sulfide	Naimer 8702 or Degussa TMT-15
Lime (hydrated)	93% Ca(OH)2
Others	

6.2.2 Chemical Dosing Rate

See Mass balance for data

Proposal 1

Coagulant (as 40% ferric chloride)	30 to 50 mg/L as Fe	lb/hr	gel/hr
Polymer	1 to 3 mg/L	lb/hr	gal/hr
Dewatering Polymer (if needed)	TBD: mg/L	Ib/hr_	gal/hr
Sulfuric Acid (93%)	50 to 100 mg/L	lb/hr	gal/hr
Sulfide	5 to 10 mg/L as 9	ib/hr	gal/hr
Lime (hydrated)	upto 5300 mg/L as Ca(OH) ₂	lb/hr	gal/hr
Others			
	mg/L	ib/hr	gal/hr
	mg/L	(T) a C a a C ib/hr	gai/hr
	me/L	lb/hr	gal/hr

\$.2.3 Chemical Description and Estimated Cost

Proposal 2

1 (P P P P P P P P P P P P P P P P P P	
Coagulant (as 40% ferris chloride)	
Polymer	
Dewstering Polymer (If needed)	
Sulfurio Acid (83%)	
Suifide	
Lime (hydrated)	
Others	

8.3.4 Chemical Docume Rate

Proposal 2

Coegulant (as 40% ferris chlorids)	mgA₌	la factor	golfur
² olymer	engA.	and the state of t	gally
Dewatering Polymer (if needed)	Alle Angle	ibar	gailer
Sulfurio Acid (9294)	mgA.	lb/hr	gei/hr
Sulfide:	mal	lb/hr	Schule State Golfer
Lime (hydrated)	mgA.	lbAvr	gelfy
Others			
	mg/L	lbfr .	galfhr
	mg/L	东部设施装饰桌部 lb/lw	galhr
	mg/L	ib/w	galAr

6.3 Wastewater Treatment System Process Description - Plant Crist

Desaturation Tank, Sulfide Mix Tank, Cosquiation Mix Tank, and Solide Contact Clariflet with integral floculation zone.

These unit operations are followed by Three (3) x 50% Gravity Filters: A common Studge Dewatering System and chemical feed skids are also included.

The chemical processes are described below:

- -Lime addition shall be employed as the first step to raise the pH of the FGD wastewater to a range of ~ 9.5 to 9.5. In this, pH range, heavy metals react with the lime to form insoluble metal hydroxides. Additionally, the descuration of the gypsum lader wastestream will be enhanced by the addition of lime, as well as routinely recycling a portion of the clarifier underflow to the front to the process. The lime source for addition shall be hydrated lime; which will be routinely fed through a lime stury makeup system.
- -Organo Bullide will then be added to further reduce the solubility of heavy metals by forming metal sulfides. For this application, either Nalmet 8702 or TMT-15 organo sulfide megents shall be used as the assure of sulfide chemical.
- -Coagulation of the metal hydroxide and metal sulfides mixture will then be reacted with a 40% ferric chloride solution to aid in the formation of larger precipitated solids for subsequent flocculation and settling. Filter Press filtrate and gravity filter spant backwash waters will continuously be returned at a controlled range to this process reactor to enhance solids formation. The pH will be controlled to a specific and point to optimize performance. (Expected ~6.0 to 9.5 range, to be determined under field conditions.).
- -Plocaulation using an anionic polymer is provided for addition under controlled attred conditions. The polymer shall be added after dilution through an automatic mixing blending system to the flocoulation zone of the clarifier.
- -Clarification for the separation of precipitated metals and inert solids using gravity separation is expected to result in a clarifier effluent containing on everyge 20 ppm TSS or less. The clarifier underflow is estimated at 4% TSS for the metal hydroxide/metal sulfides inbiture.
- -Gravity Filtration for removal of suspended solids to <1 ppn prior to discharge will incorporate conventional gravity sand filter technology.
- -Dewatering of the clarifler underflow will first be directed to a studge holding tank, and then to recessed plate and framefilter pressing operations. Solids dewatering to at least 30% dryness is expected.

6.4 Equipment Fill in Data

6.4.1 Lime Storage & Feed Equipment

	Proposal 1	Proposal 2
System Manufacturer		
Storage Silo		
Quantity	One (1)	
Effective storage volume	3000	die en en en en en en en en en en en en en
Inside diameter		ft. and in.
Straight side length		ft, and in.
Cone angle	KG ZERYS (CONSTRUCTOR	degrees

Cone height Material of construction	Carbon Steel		π. and
Interior coating manufacturer/system	Cal port cutter		}
Exterior coating manufacturer/system	See Paint Spec		 -
Operating weight	60		tons
torage Silo Fill Line			1
Material of construction	C9		1
Fill connection type / manufacturer	Carfilock		
Compression seal coupling manufacturer	Mottis		
in Activator			
Manufacturer	Metal Fab	全国的国际的国际	
Materials of construction	CS CS		
Model No.	4' Model		<u> </u>
inlet flange size	60*		1
Outlet flange size			
Utility requirements, compressed air or electric	TO STATE OF THE ST		hβ
ime Feeder			
Manufacturer			
Materials of construction	8 9 87-065		1
Model No.	32-055		lbe/b-
Capacity Range, to Power requirements	Security of the security of th		hr.
		 A service process in the first process of the service	U U
Rorage Silo Pulse Air Bag Quantity			
Manufacturer	DCE or Flex Kleen		
Materials of construction			
Model No.	VS16K53		
Air filtration capacity	1000		ft ³ /min
Filter surface area	1000 161		ft ²
Utility requirements, compressed air capacity	75 S. V. T. L. G. S. V. S. S. S. S. S. S. S. S. S. S. S. S. S.		scfm
Storage Silo Exhaust Fan			
Quantity			
Manufacturer	Daylon		
Materials of construction	CS and Aluminum		1
Model No.	4C359		-3:
Air capacity			ift"/min
Utility requirements, electric	16		jhp.
ime Silo Level Switches		and producery segments without the last order of a control	ļ
Quantity	3		ļ
Manufacturer	Bindicator		
Model No.			
Туре		The Burn of the first the second second second second	┼──
ime Silo Continuous Level Instrumentation		CPS POCKS PORTES CASSESSED BOOKS HIS OVER POSSESSES	
Quantity	Magnetrol		} -
Manufacturer	704-501 A-130		
Model No.	Radar		
Burry Tank Continuous Level Instrumentation	and the second s	And the state of the product to a state of the state of t	i i
Quantity			
Manutacturer	Magnetre		
Model No.	704-501 A-130	CHARLES AND FILL IN AND AND AND	
Туре	Radar		1
Blurry Tank			
Quantity	A STATE OF STATE		
Capacity	1000	。 第二章 等化,但许可能的更加。	gal
Operating weight	12000	报记录图 建设定工作 医成形成形式	lbs
Shell material of construction	CS CS		1
Lining material of construction	None	Harrisanter fra Barbara	1
Mixer manufacturer	Lighting		
Model No.		The second secon	-
Siurry feed piping material	C8		-
quipment Area			
Insulation thickness	1		jin.
Insulation R-value	1/2		1
Quantity of lights			
Type of lights Light wattage, each	incandeacent 100		-
LICITE WELLECT, CACT	See Paint Spec		
		11 中国公司中国共享的公司公司公司公司公司公司公司公司公司公司公司公司公司公司公司公司公司公司公司	
Interior coating manufacturer/system			kW
	8 kW		kW ft. and l

Power requirements			Inp.
ime Slurry Feed Pump(s)	Pump selectio	n to be discussed.	
General Data	100		
Pump manufacturer Model	Weir or Equal		-
	Horizontal Centrifugal		4
Type Connections	LO KOURT COUNTINGS		1
Size		。 2015年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 -	ļ
Size			norm in al-
Discharge	TV S - R E S A D - SO - SO - SO - SO - A D	A SEA COMMUNICATION OF THE SEA	nom. Inch
	1 (A) (A) (A) (A) (A) (A) (A) (A) (A) (A)	Control of the Contro	nom, Inch
Fignge Class	A NAME OF STREET STREET, WITHOUT AND ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT AND ADDRESS OF THE STREET, WITHOUT AND ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITH ADDRESS OF THE STREET, WITHOUT ADDRESS OF THE STREET, WITHOUT	an Espaina No. 1900 (190) (1900)(1900 (1900)(1900 (1900)(190)(1900 (1900 (1900 (1900 (1900 (1900 (1900 (1900 (1900 (1900	
Suction			
<u>Discharge</u>	AND THE PARTY OF T		
Net weight			1
Pump (less motor)			ib
Baseplate			lb_
Performance Data, each pump			-
Rotative speed			rpm
Flow rate at which maximum power requiremen			gpm
Recommended minimum continuous flow			apm
Seal water flow/pressure required			gpm and
Guaranteed performance, each pump			l
Capacity at design conditions	· · · · · · · · · · · · · · · · · · ·		gom
Total head at design conditions			in H₂O
pump shaft center line		o to provincia de al contrato al horaco	ft H₂O
Pump efficiency at design conditions		e eschiente te telepietoria escie	%
Maximum shutoff head			ft H₂O
Power requirements	an algebra belathan en skalleg.		
At design conditions			hp
At shutoff			hp
Maximum		TRANSPORTED AND AND AND AND AND AND AND AND AND AN	hp
Pump Construction			8
mpeller diameters	such York the State of Water State of the St	1. 15 16 16 16 16 16 16 16 16 16 16 16 16 16	
Design			in.
Maximum available			ln.
Minimum available		Control of the Contro	ln.
Materials			
Casing			
Shaft			
Impeller	Control of the contro		
Shaft sizeves			
Impeller wearing rings		D. A. M. C. C. C. C. C. C. C. C. C. C. C. C. C.	4
Casing wearing rings	SEASTERNAME TO SEASTERN SEE	1000000000000000000000000000000000000	
Type of bearings	A STORY OF THE STO		
Rediei			E .
Thrust	李三姓氏的第一种 医多数		
Mechanical shaft seal	对自己的基本的证明的基本的		
Manufacturer		2000年1900年1900年1900年1900年1900年1900年1	
Model No.	。 中国的政策的政策和企业的企业的企业的企业。	ALLE TO SEE TO SEE THE LATE	
Shaft diameter	表现名字表。C. 作品的自由的基本的现在分词。2017		
At bearing location(s)	printeriore in the second and the final		in,
At seal packing location(s)			in.
Sleeve, outer diameter			ln.
Coupling	ELANGE TO BE ALL ADOPTIONS		
Manufacturer			1
Model No.	BASE 12-6-46-WWW.25-18-18-63-63-63-63-63-63-63-63-63-63-63-63-63-		i
Rated power/service factor			hp
List of special tools which will be furnished			i.
Field assembly work required			
Shipping weight			lbs
ixer			
Manufacturer	是 Lightnin 表 学 是 一	。 [1] 10 10 10 10 10 10 10 10 10 10 10 10 10	
Materials of construction	31666	为 使用的关键的 医高层性	
Connection Type (baseplate or flanged)	Clamp		
Model No.		等 情感交替 化光线 医双髓切除 医艾克斯氏学	
ocal Control Panels			T
Panel size (L x W x H)			ft and in
Panel approximate weight		THE TALL STREET AND SOUTH TO SEE SECTION OF	lbs
Manufacturer	THE STATE OF THE S	Z EGOSEÇÜRGEN STREETE GEGE	8
Model			
rogrammable Logic Control Systems			1

Manufacturer	[18] 28.78.78.78.78.78.28.48.48.48.48.48.48.48.48.48.48.48.48.48		
Model No.			
Low Voltage Induction Motors			
Motor manufacturer			
Model number	THE STATE OF THE S		
Driven Equipment	1965年代2000年度1965年度1965年		
Design standards (e.g., NEMA/IEEE, IEC)			
Driven equipment maximum brake horsepower		型型型 (A) (A) (A) (A) (A) (A) (A) (A) (A) (A)	hp
Motor nameplate	对对自己,不是具有是各种的对外基本		hp
Service factor (NEMA/IEEE motors only)	。 12. 10. 10. 12. 12. 12. 12. 12. 12. 12. 12. 12. 12		
Motor bearing type	40-10-20-20-20-00-00-00-00-00-00-00-00-00-00	交给并且"你是这些不是 "	
Motor efficiency at nameplate, hp, percent	FLORESCENE SERVICES AND AND AND AND AND AND AND AND AND AND		
Bearing lubrication system		E Charles the Charles of the Control of	
Space heater rating (watts / voltage / phase)	CONTRACTOR CONTRACTOR		

6.4.2 Solide Contact Equipment

	Proposal 1	Proposal 2	
Clarifier	Wastewater	Cisrifler A & B	
Quantity	Two (2) x 100%	数1000年100日,1000年100日	
Materials of construction	Carbon Steel Sidewalls with rubberlining, Concrete bottom		
Minimum system capacity	0		gpm
Maximum system capacity	180		gpm
Average effluent turbidity	≤3 (expected)		NTU
Average effluent suspended solids	20		mg/L
Maximum rate of flow increase without affluent	60		gpm/hr
Influent water temperature rise limitation			°F/hr
Underflow solids concentration	4%		% weigh
Diameter	The state of the s		ft
Height	15 n	影響等 医海绵 医肾炎	ft
Reaction well dimensions	3 diameter x 14 high		ft
Recirculation rate (as % of inlet flow)	100% - 600%	这名。10世纪第二世纪 - 数20%	
Soraper Drive Unit (Sludge Rake)			
Manufacturer	DBS Manufacturing	医原理性 医阿拉斯氏病 医克里氏	1
Materials of construction	Chlorobutyl RL Carbon Steel		:
Model number	925	Strange and the strange of the stran	
Type	Trosa Villa de la Companya de la Com		is.
Motor Data			1
Manufacturer	Baldon/Reliance or Equal		
Enclosure	TEFG:	aran amarik kusas	
Horsepower at design conditions	1 7.		hp
Service factor	1.15 (1.15)	A Trust Language D. M. Signer	
Voltage/Phase/RPM	460/3/60		
Variable frequency drive	N/A		
Manufacturer	N/A		
Model number	N/A		
Type]
Motor Data			
Manufacturer			
Enclosure			
Horsepower at design conditions			hp
Service factor			
Voltage/Phase/RPM	可是这种情况的对象的现在分词的		
Variable frequency drive	SERVICE TO SERVICE PROPERTY.	(51) A Parade Trible 1981年 (51)	
Voltage/Phase/RPM	美国大学的人名英格兰女子	对于其它的问题是 是一个"是"的问题。由	4
Variable frequency drive	recommendation of the property	average a special party of	
Guaranteed Clarifler Effluent Quality		Garage Bally and Section 2002 C	
Turbidity	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	er gerkonsk store hen stofat kroken.	NTU
Suspended solids	\$30		mg/L

6.4.3 Agitator

_	Proposal 1	Proposal 2
Agitator	Desatura	tion Tank Agitator A & B
Manufacturer	Lightain	
Connection Type (baseplate or flanged)	Baseplate Center Mounted 12* above tank on customer supplier support beam	
Model No.	73Q7.5	
Weight	1135.74 (excludes nubbarlining	k a la la la la la la la la la la la la l
Impeller diameter	49	
Impelier(s) height from floor	其一种"数据"。第 32	

Minimum submergence required from tank	4 ft - 3 in.		ft. and in
Shaft length	174		ft. and in
Blade angle	90		degrees
Number of blades	3/3 (Total 6)		7
Number of baffles required in basin		型 人名英格兰 医阿拉克氏 医克里氏 医克里氏	20
Degrees between baffles	120		
Saffie dimensions, L x W x H	14-8 L x 0-9 W		ft. and in
Impeller and shaft material	Carbon Steel	注意的意思的表现的	3
Impeller and shaft covering material	Rubberlining		
Impeller and shaft covering thickness	0.1875	等。 图1017年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1918年 1	ln.
Tank Bridge Loadings			
Bending moment	81400	es premium ar de la como estada	lbf-ft
Torque	13746		lbf-ft
Axiai Load	≥840	5. 数数处理专项 英国地名美国	lbf
Gear reducer			
Manufacturer	Lightnin	3. [2014] 中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国	1
Model No.			(4)
Reduction ratio (;)	314:1		
Number of reductions	2		74
Service factor	· · · · · · · · · · · · · · · · · · ·		
Performance data			"
Operating speed	and the state of t	e flatar a skip i charace	rpm
Critical shaft speed			rpm
Tip speed	1077		ft/s
Low Voltage Induction Motor			
Motor manufacturer	TECO Westinghouse		
Model number	Max E2		
Driven Equipment			
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake			S.
horsepower	Later		hp
Motor nameplate, hp (kW)		建 罗斯的《李斯曼》的《李斯·科学	
Service factor (NEMA/IEEE motors only)	Later		
Motor bearing type	Radia		
Motor efficiency at nameplate	Later	(1) (1) (2) (2) (2) (2) (2) (3) (3) (3) (4) (4) (5) (5) (5) (5) (5) (5) (5) (5)	hp, %
Searing lubrication system	Spissin Oli/Gresse On Outer Shaft	en Programme de la live de la company de la	iro Sa Sa
Space heater rating (watts / voltage / phase)			*

	Proposal 1	Proposal 2	
Agitator	Coagulation	Mix Tank Agitator A & B	
Manufacturer	Lightnin	TO THE PERSON IS NOT BEEN ASSESSED.	
Connection Type (baseplate or flanged)	Baseplate Center Mounted 12* above tank on customer supplied support beam		
Model No.	7302	Exercia (CES), control (SD), control (CES)	
Weight	880.03 (excludes rubberlining)	in the second second second second second second second second second second second second second second second)
Impeller diameter	30	in the second second second	1.
impeller(s) height from floor	30	nces (a property of the first excellent).
Minimum submergence required from tank	3.8	n the second second second second second second second second second second second second second second second	and in
Shaft length	18.90 (18.90)		and h
Blade angle	96	d Company of the second	egrees
Number of blades	3/3 (Total 6)		
Number of baffles required in basin			
Degrees between baffles	120		
Baffle dimensions, L x W x H	12-0" L x 0-7/ W	n en en en en en en en en en en en en en	and i
Impeller and shaft material	Cartion Steel:		
Impeller and shaft covering material	Rubberlining	5000000000000000000000000000000000000	
Impeller and shaft covering thickness	0.1876		١.
Tank Bridge Loadings			
Bending moment	B1400		rf-ft
Torque	13748	1112	of-ft
Axial Load	2840		of
Gear reducer			
Manufacturer	Lightnin		
Model No.	70 0 3		
Reduction ratio (18.77	SECRETARIST OF SECRETARIAN SECTION	
Number of reductions	2		
Service factor	FINE COLUMN STATES	和社会主义。在国际国际自己的经济发展,	
Performance data			
Operating speed		And the second state of th	om
Critical shaft speed	ALEXANDER DE CAMBON DE CAM	MARKET BOOK BOOK TO THE TOTAL THE TO	OFF)

70 0000		ENGLAND OF THE PROPERTY OF THE	T
Low Voltage Induction Motor	785		ft/s
Motor manufacturer	TECO Westinghouse		
Model number	Cater		
Driven Equipment	Coagulation Tank Agitator	B. A. C. A. M. C. M. E. W. M. C. M. C. M. C. M. C. M. C. M. C. M. C. M. C. M. C. M. C. M. C. M. C. M. C. M. C.	
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake			
horsepower Motor nameptate, hp (kW)	Later		hp
Service factor (NEMA/IEEE motors only)	later		ļ
Motor bearing type	Radal	PRINTED TO STATE OF THE STATE O	
Motor efficiency at nameplate	A CANADA	Marting Control of the Section 1982	hp. %
	Oil Splash/Grease On		
Bearing lubrication system	Outer Shafts		
Bassa hasta and a day to the said at the said		or some and the second of the	
Space heater rating (watts / voltage / phase)	TBD SAME		<u> </u>
Agitator	Proposal 1	Proposal 2 ix Tank Agitator A & B	
Manufacturer	Lightair	Z TRIK AGILLANT A & B	г —
I FF SET CHE CALLED	Baseplate Center Mounted 12*	5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
	above tank on customer supplied		
Connection Type (baseplate or flanged)	support beam		
Model No.	73Q3		
Weight	891,38)		lb
Impeller diameter	38		in.
Impelier(s) height from floor	25		in.
Minimum submergence required from tank Shaft length	3'-9" 13'-9"		ft. and in. ft. and in.
Blade angle	C 0		degrees
Number of blades	3/3 (Total 6)		degrees
Number of baffles required in basin			
Degrees between baffles	120	医德特特氏 经收益 医水流性 医水流性 医皮肤	
Baffie dimensions, L x W x H	111-7"L x 0-8" W		ft. and In.
impeller and shaft material	Carbon Steel		
Impeller and shaft covering material	Rubberlining		
Impeller and shaft covering thickness Tank Bridge Loadings	0,1875		in.
Bending moment	10800		lbf-ft
Torque	3387		bi-ft
Axial Load	1884	为最级的全体。2012年1月1日的1日中国 1月3日。	ibf
Gear reducer			
Manufacturer	Lightning		
Model No.	78Q\$ 20.951		
Reduction ratio (_:) Number of reductions	20.543		
Service factor			
Performance data			
Operating speed			грт
Critical shaft speed		and the second of the second of the second	rpm
Tip speed	791	RECEIVABLE SANCE	ft/s
Low Voltage Induction Motor	TECO Westinghouse		
Motor manufacturer Model number	Later		
Driven Equipment			
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Oriven equipment maximum brake			
horsepower	Section of the sectio	AND COLOR OF CHANGE OF THE COLOR OF THE COLO	hp
Motor nameplate, hp (kW)	2		hp
Service factor (NEMA/IEEE motors only)	Later Radial		
Motor bearing type	Ragia:		hp, %
Motor efficiency at nameolate		THE CONTROL OF THE PROPERTY OF	17
Motor efficiency at nameplate	Splash Oil/Grease on	图14年1月20日 图18日 图18日 图18日 图18日 图18日 图18日 图18日 图18	
Motor efficiency at nameplate Bearing jubrication system	Splash Oil/Grease on Outer Shaft		
	Outer Shart		
	Outer Sheft		
Bearing lubrication system Space heater rating (watts / voltage / phase)	Outer Shaft TBD Proposal 1	Proposal 3	
Bearing lubrication system Space heater rating (watts / voltage / phase) Agitator	Cuter Shaft TBD Proposal 1 Flesh Mix	Proposal 2 Tank Agitator A & B	
Bearing lubrication system Space heater rating (watts / voltage / phase)	Outer Shaft TBD Proposal 1		
Bearing lubrication system Space heater rating (watts / voltage / phase) Agitator	Cuter Shaft TBD Proposal 1 Flesh Mix		
Bearing jubrication system Space heater rating (watts / voltage / phase) Agitator Manufacturer	Cuter Shaft TBD Proposal 1 Flesh Mix		
Bearing lubrication system Space heater rating (watts / voltage / phase) Agitator	Cuter Shaft TBD Proposal 1 Flesh Mix		

Weight Impelier diameter		the second secon	The second secon	
		gringer (Trade of Fra	Carrier Land Control	lb
		1.48年的第三人称单数	美国的人员在 自己全国的主义的	in.
impeller(s) height from floor	Transfer with the second	15. 在独特的特殊	entre de la la la la la la la la la la la la la	in.
Minimum submergence required from tank	10 X 10 At 200 14			
Chaffian the				ft. and in.
Sheft length		PRESIDENT.	BONELLE BUILDING MATTER A CONTROL	ft. and in.
Blade angle		The Sign of Michigan		degrees
Number of blades	THE PART HERE	· 网络拉拉斯 医二十二		
Number of baffles required in basin	3 4 5 4 5 6			
Decree het	1.30 C. D. C. C. S. C. C. C.	Associated Sec		1
Degrees between baffles				1
Baffle dimensions, L x W x H	######################################		是是16年15月2日的16年15日本文字的1879	ft. and in.
impelier and shaft material	FRANCE ST. SERVE	เรียงสายเกิดประเทศ	Billion and the second second second	
Impeller and shaft covering material				1
		Zaran Albania	Barra Maria Brasil Carlo Carlo Barra Carlo	1
impeller and shaft covering thickness				in.
Tank Bridge Loadings				
Bending moment	2000年第二次。 2000年第二次	要是"大学"来说,这是是是是		15.60
		Control of the second of the second		lbi-ft
Torque		· · · · · · · · · · · · · · · · · · ·		ibi-it
Axial Load	BOAT AS PRINT	新生产是		lib i
Gear reducer				1
Manufacturer	Printer has the gas in state as	ASIA PARAMETER CONTRACT	enterent and the state of the s	
Model No.		建设设置的		
Reduction ratio (;)	報告性等ない場合		的可导致性的 医中耳氏切除性	
Number of reductions		EAST TO FERE		
	and the second second		Deliver to the Addition of the	ļ
Service factor		影響學所以表	在这个意思的意思。在1600年的第三人	<u></u>
Performance data	1			
Operating speed	PARTE N.W.	\$515;44:40:500;412.5		rpm
Critical shaft speed	8,5,25,089,178			
	Control of the Contro			rpm
Tip speed		企业的 自然 (11) (12)		rom
Low Voitage Induction Motor			· · · · · · · · · · · · · · · · · · ·	
Motor manufacturer		EMERICAN SERVICE		
Model number	are recolored			
· · · · · · · · · · · · · · · · · · ·			Singled Alexandry Care, Astronomy Care Burger	
Driven Equipment		h giện người họi một mới được		İ
Design standards (e.g., NEMA/IEEE, IEC)				1
Driven equipment maximum brake	4,556,554,53			
horsepower		重点的特別的影響。		1.
	perfection of the office			hp
Motor nameplate, hp (kW)			State of the state	hp
Service factor (NEMA/IEEE motors only)		3-5-3/490\$Lt		
Motor bearing type	AND WAR HOUSE	40.48.084.14.07 (PA, E)		
	All and the contract of a second of the seco	OF COMPANY OF THE SECOND	Printing Transport and the state of the stat	
Motor efficiency at nameplate	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			hp, %
	7年的特殊。1988			l
Bearing lubrication system	factor and the second			
	GOST THE TRANSPORT	2018 10 2 SEC. 35 RS		
		经证据的证据的。但是否的各种的		
6	Errichten von			l
Space heater rating (watts / voltage / phase)		A STATE OF S		
Space heater rating (watts / voltage / phase)	Prop	osal 1	Proposal 2	
	Prop	osal 1	Proposal 2 Clariffer Turbine & & B	
Agitator		Wastewater	Clarifier Turbine A & B	
Agitator Manufacturer	DBS Mar	Wastewater lufscturing	Clarifier Turbine A & B	
Agitator Manufacturer Connection Type (baseplate or flanged)	DBS Mar	Wastewater	Clarifler Turbine A & B	
Agitator Manufacturer	DBS Mar Part of Dual	Wastewater urscturing urntable Drive	Clarifler Turbine A & B	
Agitator Manufacturer Connection Type (baseplate or flanged) Model No.	DBS Mar Part of Dual 8	Wastewater urlacturing urntable Drive 25	Clarifier Turbine A & B	fb.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight	DBS Man Part of Dual 8	Wastewater iufscturing urritable Drive 26	Clarifier Turbine A & B	ib .
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter	DBS Mar Part of Sugh 8	Wastewater surscturing urntable Brive 25	Clarifier Turbine A & B	in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight	DBS Mar Part of Sugh 8	Wastewater surscturing urntable Brive 25	Clarifier Turbine A & B	
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter	DBS Mar Part of Duel 8 44 3	Wastewater urfacturing urntable Drive 26 300 44 72	Clarifier Turbine A & B	in. In.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank	DBS Mar Part of Duel 8 44 3	Wastewater urfacturing urntable Drive 26 300 44 72	Clarifier Turbine A & B	in. in. ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length	DBS Mar Part of Sual 8 4 3 N/A in Ov	Wastewater urfacturing urntable Brive 26 300 44 7 2 strilow Tank	Clarifler Turbine A & B	in. in. ft. and in. ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle	DBS Mar Part of Sual 8 4 3 N/A in Ov	Wastewater urfacturing urntable Brive 26 300 44 7 2 strilow Tank	Clarifler Turbine A & B	in. in. ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades	DBS Mar Part of Bugl 8 4 3 N/A in Ove	Wastewater urfacturing uritable Drive 26 300 44 72 srilow Tank 5-62 igrees	Clarifler Turbine A & B	in. in. ft. and in. ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle	DBS Mar Part of Bugl 8 4 3 N/A in Ove	Wastewater urfacturing uritable Drive 26 300 44 72 srilow Tank 5-62 grees	Clarifler Turbine A & B	in. in. ft. and in. ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin	DBS Mar Part of Bugl 8 4 3 N/A in Ove	Wastewater urfacturing uritable Drive 26 300 44 72 srilow Tank 5-62 grees	Clarifler Turbine A & B	in. in. ft. and in. ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles	DBS Mar Part of Buel 8 44 3 N/A in Ove	Wastewater urfacturing unitable Drive: 25: 3000 4** 72: srifeys Tanjk 5-08: igrees: 4: 4:	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H	DBS Mar Part of Duel 8 4 A4 N/A in Ow	Wastewater urfacturing urntable Drive 25: 300 44* 72 strictor Tank 5-6* igreed: 44 40 60 60 611.8*	Clarifler Turbine A & B	in. in. ft. and in. ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier(e) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impelier and shaft material	DBS Mar Part of Duel 8 4 4 N/A in Ow 11 45 de	Wastewater urfacturing urritable Drive 25: 8000 49: 72. strictor Tank 5-68: sgrees 4 4 4 6 6 111-8: ex:58	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H	DBS Mar Part of Duel 8 4 4 N/A in Ow 11 45 de	Wastewater urfacturing urntable Drive 25: 000 42 72 stricky Tank 5-65 igrees 4 4 4 100 000 888	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft material Impeller and shaft material	DBS Mar Part of Buel 8 44 N/A in Ow 11 A5 de 8*x Dupl	Wastewater urfacturing urntable Drive 25: 000 42 72 stricky Tank 5-65 igrees 4 4 4 100 000 888	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x Wx H Impeller and shaft covering material Impeller and shaft covering material Impeller and shaft covering thickness	DBS Mar Part of Buel 8 44 N/A in Ow 11 A5 de 8*x Dupl	Wastewater urfacturing urntable Drive 25: 000 42 72 stricky Tank 5-65 igrees 4 4 4 100 000 888	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier diameter Impelier (s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impelier and shaft material Impelier and shaft covering material Impelier and shaft covering thickness Tank Bridge Loadings	DBS Mar Part of Buel 8 44 3 N/A in Ov 11 45 de 8/x Dupl	Wastewater urfacturing uritable Drive 26 300 48 72 strictor Tanjo 56 igrees 4 4 4 90 11-8 ex.SS	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft material Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment	DBS Mar Part of Duel S 44 N/A in Ove 11 45 de 87 x Duel N	Wastewater urfacturing uritable Brive: 25: 3000 4** 72 srifey Tank 565 igrees 4 4 4 100 111-8* ex:58	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier diameter Impelier (s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impelier and shaft material Impelier and shaft covering material Impelier and shaft covering thickness Tank Bridge Loadings	DBS Mar Part of Duel S 44 N/A in Ove 11 45 de 87 x Duel N	Wastewater urfacturing uritable Brive: 25: 3000 4** 72 srifey Tank 565 igrees 4 4 4 100 111-8* ex:58	Clarifler Turbine A & B	in. in. ft. and in. ft. and in. degrees ft. and in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft covering material Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque	DBS Mar Part of Duel S 44 3 N/A in Ov 11 45 ds 8/x Duel N/N N	Wastewater urfacturing urritable Drive 25: 3000 4** 73 srilow Tank 5-6* grees 4 4 4 4 90 61-8* ex-58 A-//A	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. degrees ft. and in. in. in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load	DBS Mar Part of Duel S 44 3 N/A in Ov 11 45 ds 8/x Duel N/N N	Wastewater urfacturing urritable Drive 25: 3000 4** 73 srilow Tank 5-6* grees 4 4 4 4 90 61-8* ex-58 A-//A	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. degrees ft. and in. in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier(s) height from floor Minimum submergence required from tank Shaft length Black angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impelier and shaft material Impelier and shaft covering material Impelier and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer	DBS Mar Part of Duel 8 44 N/A in Ow 11 45 de 8/2 Duel N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/	Wastewater urfacturing urntable Drive 25: 300 44* 72 sirilow Tanic 5-64 igrees 44 41 41 41 41 41 41 41 41 41 41 41 41	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. degrees ft. and in. in. in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H impeller and shaft material impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer	DBS Mar Part of Duel 8 44 3 N/A in Ow 11 45 de 5,000 5,000 10	Wastewater urfacturing urntable Drive 25: 300 42 72 sinlow Tanic 5-62 igrees 44 45 10 11-85 86 16 17-85 16 16 16 16 16 16 16 16 16 16 16 16 16	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. degrees ft. and in. lin. lin. lin.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier(s) height from floor Minimum submergence required from tank Shaft length Black angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impelier and shaft material Impelier and shaft covering material Impelier and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer	DBS Mar Part of Duel 8 44 3 N/A in Ow 11 45 de 5,000 5,000 10	Wastewater urfacturing urntable Drive 25: 300 42 72 sinlow Tanic 5-62 igrees 44 45 10 11-85 86 16 17-85 16 16 16 16 16 16 16 16 16 16 16 16 16	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. degrees ft. and in. in. in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impelier diameter Impelier(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H impeller and shaft material impeller and shaft covering material impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer	DBS Mair Part of Duel 8 44 N/A in Ow 11 45 de 8 B X Duel N/N N/N N N	Wastewater urfacturing urritable Drive 25: 8000 47: 73: srilew Tank 9-68: 90: 11-8: 90: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90:	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. degrees ft. and in. in. in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft material Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio ()	Part of Publish S S A A A A A A A A A A A A A A A A A	Wastewater urfacturing urritable Drive 25: 8000 47: 73: srilew Tank 9-68: 90: 11-8: 90: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90:	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. degrees ft. and in. in. in.
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft material Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Model No. Reduction ratio (Part of Duels S 44 N/A in Ove 11 45 de 87.3 Duels N/A N/A 10 10 10 10 10 10	Wastewater urfacturing unitable Brive: 26: 3000 4** 72 srifeyy Tarix 5-65 igraes 4 4 60 f11-8* ex:58 AA /AA Ln-lbs 0000	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. ft. and in. degrees ft. and in. in. ibf-ft
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Manufacturer Model No. Reduction ratio (;) Number of reductions Service factor	Part of Duels S 44 N/A in Ove 11 45 de 87.3 Duels N/A N/A 10 10 10 10 10 10	Wastewater urfacturing urritable Drive 25: 8000 47: 73: srilew Tank 9-68: 90: 11-8: 90: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90: 11-8: 90:	Clarifler Turbine A & B	in. In. ft. and in. ft. and in. ft. and in. degrees ft. and in. in. ibf-ft
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight Impeller diameter Impeller(s) height from floor Minimum submergence required from tank Shaft length Blade angle Number of blades Number of baffles required in basin Degrees between baffles Baffle dimensions, L x W x H Impeller and shaft material Impeller and shaft covering material Impeller and shaft covering thickness Tank Bridge Loadings Bending moment Torque Axial Load Gear reducer Model No. Reduction ratio (DBS Mar Part of Buel 8 44 N/A in ow 11 A5 di Buel N/A Dupl N/A S,000 8,000 10	Wastewater urfacturing unitable Drive 25: 300 44* 72 sirics Tanic 5-58 signess 4 4 6 100 6-11-8* ex-SS A /A 1-1-bbs 000 iter- tier fift	Clarifler Turbine A & B	in. In. It. and in. It. and in. It. and in. degrees It. and in. in. ibf-ft ibf-ft

Critical shaft speed	Later		rpm
Tip speed	3.9		ft/s
w Voltage Induction Motor			
Motor manufacturer	Baldor/Reliance/Equal		
Model number	Later	(E) 发展的现在分词 (E) 发展的	
Driven Equipment	Later		
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake horsepower	1.0		αń
Motor nameplate, hp (kW)	300		-
Service factor (NEMA/IEEE motors only)	12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Motor bearing type	Later	AR WEST OF TX BUREL	
Motor efficiency at nameplate	Later	以表现。	hp, %
Bearing lubrication system	Letter		
Space heater rating (watts / voltage / phase)	Later		
	Proposal 1	Proposal 3	

	Proposal 1	Proposal 3	
Agitator	Sludge H	olding Tank Agitator	
Manufacturer	Lightnin		1
	Baseplate Center Mounted 12"		1
	above tank on customer supplied		1
Connection Type (baseplate or flanged)	support beam	(1) 10 10 10 10 10 10 10 10 10 10 10 10 10	1
Model No.	7407.5	的基本,在各种企业的企业的企	1
Weight	Ch.L. She um 1811.53 he com second	PERMIT TENENCE PROPERTY OF THE REAL VA	Ib
Impeller diameter	54		in.
Impeller(s) height from floor	4.30	A THE WITCH THE TANK I A SHIPLE	in.
Minimum submergence required from tank	6-0X	THE PERSON AND A PERSON OF THE	ft. and in.
Shaft length	17'8'	Section and Property Commission of the	ft. and in,
Blade angle	90		degrees
Number of blades			
Number of baffles required in basin			
Degrees between baffles	120		
Baffle dimensions, L x W x H	17'-6" L x 1'-0"W	《	ft. and in.
impeller and shaft material	Carbon Stesi		
impeller and shaft covering material	Rubberlining		
Impeller and shaft covering thickness	0.1875		in.
Tank Bridge Loadings			
Bending moment			lbf-ft
Torque	10372		lbf-ft
Axial Load	3302		lb!
Gear reducer			
Manufacturer	Lightnin	\$P\$ (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
Model No.	7407.5		1
Reduction ratio (: _)	25.6:1	entroller in version of the street	
Number of reductions	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Service factor			
Performance data			
Operating speed	THE PROPERTY OF THE PROPERTY OF THE PARTY OF	是最高的學術是是發展的數學學	rpm
Critical shaft speed			гргп
Tip speed	89 (10)		ft/s
Low Voltage Induction Motor			
Motor manufacturer	TECO Westinghouse		·
Model number	Later		
Driven Equipment			
Design stendards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake			
horsepower	Later		hp
Motor nameplate, hp (kW)		是在文字等的基本的 的 字段的	hp
Service factor (NEMA/IEEE motors only)			
Motor bearing type	Radia		
Motor efficiency at nameplate	Letin	医生物性 医动脉 图 电流流流线 医原流管 原	hp. %
	Spigsh Oll/Grease On		
Bearing lubrication system	Outer Shaft		
		各等的的企业中的企业的企业的企业。	
Space heater rating (watts / voltage / phase)	TO THE RESERVE TO ME THE SERVE	的过去分词 化发射性 电影影响	1

	Proposal 1	Proposal 2
Agitator	Clarifler Si	owdown Sump Agitator
Manufacturer	Lightnin	March 1922 Charles State Co. Science
Connection Type (basepiate or flanged)	Flanged	的是不是在100mm,在100mm,200mm,200mm。
Model No.	7(0 †	以2004年5月1日 (1914年2月1日 A 2015年1日 日本 11 日本
Weight	367 18	图 10 10 10 10 10 10 10 10 10 10 10 10 10

Impeller diameter	是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	in.
Impeller(s) height from floor	· 图 · 图 · 图 · 图 · 图 · 图 · 图 · 图 · 图 · 图	in.
Minimum submergence required from tank		fit, and in
Shaft length		ft. and ir
Blade angle	17. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	degrees
Number of blades		Š.
Number of baffles required in basin		3
Degrees between baffies	120	4
Baffle dimensions, L x W x H	THE PROOF OF NAME OF THE PROOF	ft. and in
impelier and shaft material	Carbon Steel	
Impelier and shaft covering material	Rubberlming	
Impelier and shaft covering thickness	0.4876	in.
Tank Bridge Loadings		1
Bending moment	439)	lbf-ft
Torque	788 (4.5)	lbf-ft
Axial Load	802	lbf
Gear reducer		
Manufacturer	Lightinins	
Model No.	7/0/	1
Reduction ratio (;)		
Number of reductions		
Service factor		
Performance data		T
Operating speed		rpm
Critical shaft speed		rom
Tip speed	850	ft/s
Low Voltage Induction Motor		
Motor manufacturer	TECO Westinghouse	
Model number	THE REST TO BE A PARTY OF THE P	*
Driven Equipment		1
Design standards (e.g., NEMA/IEEE, IEC)	NEMA	
Driven equipment maximum brake		
horsepower	Later	hp
Motor nameplate, hp (kW)		hp
Service factor (NEMA/IEEE motors only)		
Motor bearing type	Radial	
Motor efficiency at nameplate		hp, %
	Splash Ol/Grease On	1
Bearing lubrication system	Outer Shart	f
Space heater rating (watts / voltage / phase)		

8.A.4 Inlet Flow Instrumentation

·	Proposal 1	Proposal 2
Raw water flow transmitter		
Manufacturer_	Rosemouni	
Model number	6732E/6705	数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数数
Primary elements type	Magnetic Flowmeter/Flow Tube	2 世界の対象の対象の対象の対象
Primary elements manufacturer	Rosemount	
Differential pressure loss at design flow rate	TBD	psl
Raw water flow control valve		
Manufacturer	Fisher	
Model number	V200	· 特别的自己的意思。
Size		
Differential pressure loss at design flow rate	12 P C 1 2 S 310 T 1 S 5 S 5 S 5 S 5 S 5 S 5 S 5 S 5 S 5 S	pal

8.4.5 Liquid Chemical Feed Equipment

	Proposal 1	Proposal-2
Chemical Feed System	C	oagulant
Pump information		
Quantity		
Manufacturer	Pulsafeeder	grafician finant temperaturit in the finance
	Positiye Displacement	KENESE ASSEOFIIKA KENESESTATU SASSES.
Туре	Hydraulically Actuated Diaphragm	
Model No.	Pulsa Series 25HJ	
Maximum capacity	12	gph
Discharge pressure	305 rated 87 operating	psig
Hydraulic relief valve setting	80	psig
Materials of construction	PVOF/RTFE	
Calibration Columns		

reatment System	<i>:</i>		
Quantity			
Manufacturer			
Model No.	VA/777035_PV/C	AND THE ALL IN BURNEY TO SELECT	
Volume, gal	0.027		1
Materials of construction	PVC		
Chemical Injection Quili or Static Mixer		167 States Committee of Association Committee of Committe	
Quantity	CASSING CO. NAMES OF THE STATES	Landar Care Care State Control of the	
Manufacturer	William Color State Color		
Materials of construction	V 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1		
Strainers	3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	A STANCE OF THE	
Quantity		[
Manufacturer	Dultafaedar		
Model No.			
Materials of construction	pve		
Back-Pressure Valves	SCHOOL STREET, THE CONTRACT OF	The part of the pa	
Quantity			
Manufacturer	Pulebfeeder		
Model No.	VIE 2016 - VIC		
Relief valve setting	TO THE PROPERTY OF THE PROPERTY OF THE		neia
Materials of construction	TO THE RESIDENCE OF THE PARTY O	South references and appropriate services.	Pelk
Valves	The state of the s	y repetit kir kepin ammut ut kepin kenjali aligi.	
	CHECK		
Type	District		
Manufacturer Model No.	Pulsareeder Leter		
Model No.	Alloy C/PVDR		
Materials of construction	AIDY SIE VOICE		
Davida and wanting for this areaton for horseland			hp
Power consumption for this system/subsystem		Proposal 3	lish
Ohamical Fand Sundam	Proposal 1		
Chemical Feed System	· · · · · · · · · · · · · · · · · · ·	Sulfurio Acid	1
Pump Information		The real of Schools are taken at the Schools on the	
Quantity			
Manufacturer	Pulsareager		
			Ì
	Positive Displacement.		
Туре	Hydraulically Actuated Diaphragm		
Model No.	880 3		
Maximum capacity	STATES AND SERVICE STREET, NEWSCOOL	en sala servicina di sala serv	gph
Discharge pressure	The second of th		psig
Hydraulic relief valve setting	NILL DAN BOOK		psig
Materials of construction Calibration Columns	ARCY ZUFFIELD SECTION	 Interpretable of the property of	
Quantity			
Manufacturer	The state of the s		
Model No.	(A77.7042-000		
Volume, gal	THE PERSON OF AN ACCUSANCE OF THE PERSON OF		
Materials of construction	Boro Silicated Glass		
Chemical injection Quill or Static Mixer	DOJ W ORIGOTION GIASES	. Progressy from State of Sections of Congress Section (Section Sectio	
Quantity			
Manufacturer			
Materials of construction		MATERIAL CONTRACTOR OF THE STATE OF THE STAT	
Strainers	Compression of the state of the	 1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	ļ
Quantity	THE STATE OF THE SECOND ST		
Quantity Manufacturer			
Manufacturer	Pulsafeeder		
Manufacturer Model No.	Pulsateoder		
Manufacturer Model No. Materials of construction	Pulsafeeder		
Manufacturer Model No. Materials of construction Back-Pressure Valves	Pulsafeeder Alloy		
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity	Pulsafeeder Alloy		
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer	Pulsafeeder Alloy		
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No.	Pulsafeeder Alloy 3 Pulsafeeder WW777303-020		paig
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer	Pulsafeeder 3 Pulsafeeder WW/77903-0200		psig
Manufacturer Model No. Materials of construction Back-Pressure Vaives Quantity Manufacturer Model No. Relief valve setting	Pulsafeeder Alloy 3 Pulsafeeder WW777303-020		psig
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Reilef valve setting Materials of construction	Pulsafeeder 3 Pulsafeeder WW/77903-0200		psig
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Reilef valve setting Materials of construction Valves	Pulsafeeder Alloy 3 Pulsafeeder WW/77303-020 100 Carpentar 20 Check: Pulsafeeder		psig
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type	Pulsafeeder Alloy 3 Pulsafeeder WW/77303-020 100 Carpentar 20 Check Pulsafeeder Latig		psig
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer	Pulsafeeder Alloy 3 Pulsafeeder WW/77303-020 100 Carpentar 20 Check Pulsafeeder Latig		psig
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No.	Pulsafeeder Alloy 3 Pulsafeeder WW/77303-020 100 Carpentar 20 Check: Pulsafeeder		psig
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No.	Pulsafeeder Alloy 3 Pulsafeeder WW/77303-020 100 Carpentar 20 Check Pulsafeeder Latig		paig
Manufacturer Model No. Materials of construction Back-Pressure Vaives Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction	Pulsafeeder Alloy 3 Pulsafeeder WW777303-020 100 Carpentar 20 Check: Pulsafeeder Late: Alloy G/Alloy 20		
Manufacturer Model No. Materials of construction Back-Pressure Vaives Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction	Pulsafeeder 3 Pulsafeeder WW/777803-020 100 Carpenter 20 Check: Pulsafeeder Later Alloy C/Alloy 20 1.0 With 2 pumps operating		
Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem	Pulsafeeder Alloy 3 Pulsafeeder WW/77303-020 100 Carpentar 20 Check: Pulsafeeder Late: Alloy G/Alloy 20 1.0 with 2 pumps operating Proposal 1	Proposal 2	

Manufacturer

nanuraciuler	Linesideoid		
	· · · · · · · · · · · · · · · · · · ·		
	Positive Displacement		
уре	Hydraulically Actuated Diaphragn	a	<u> </u>
Aodel No.	Pulsa Series 680	Figure and Charles and All Sales and All Sales and All Sales and All Sales and All Sales and All Sales and All	
Maximum capacity	5.2		gph
Discharge pressure	185 (rated), 30 (operating)	图1998年1月1日 中華大学 医多种花子病	psig
lydraulic relief valve setting	Later		psig
Asterials of construction	PVC Head; PTFE Diaphragm		1
Calibration Columns			
Quantity	3 February 3 February 18 19 19 19 19 19 19 19 19 19 19 19 19 19		
Manufacturer	Pulsafeeder		
Model No.	W777035-PVC		
Volume, gal	0.133		
Materials of construction	PVC Head: PTPE Diaphragm		
Chemical Injection Quill or Static Mixer			
Quantity	N/A:	。 1986年,1986年,1986年第四日,1986年1988年1988年1988年1988年1988年1988年1988年	
Manufacturer		a 1915 (2018) (2018) (2018) (2018) (2018)	
Materials of construction			
Strainers	Control Barry Coll Special Special Special Special Street Special Spec		
Quantity	PERSONAL SERVICE DE LA COMPANSA DEL COMPANSA DEL COMPANSA DE LA CO		
			
Manufacturer Madel No.	Pulsarpeder		
Model No.	Later PVC	、 No. A CONTROL TO THE PROPERTY AND TH	
Materials of construction	e in the second PVC. State of the control of the co	and the contraction of the contr	1
Sack-Pressure Vaives			
Quantity			
Manufacturer	Pulsafeeder		<u> </u>
Model No.	W/77376-PVC		
Relief valve setting	60		psig
Materials of construction	PVG		
/alves			
Туре	Check		
Type Manufacturer	Check Pulstreder	化 位于各种的 8. 网络对美国和安全的	
	Pulsufeeder		
Manufacturer	Pulsafeeder Leter Ceramic/PVC 1.0 with 2 pumps operating:		hp
Manufacturer Model No. Materials of construction ower consumption for this system/subsystem	Pulsareader Later Ceramic/PVC	Proposel 2	hp
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Temical Feed System	Pulsafeeder Leter Ceramic/PVC 1.0 with 2 pumps operating:		hp
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Power life System Pump Information	Pulsarieader Leter Ceremic/PVC m 1.0 with 2 pumps operating: Proposal 1	Proposel-2 Polymer	hp
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem remical Feed System Pump Information Quantity	Pulsarieaden Leter Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1	Proposel-2 Polymer	
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem remical Feed System rump Information Quantity Manufacturer	Pulsarieaden Leter Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1	Proposel-2 Polymer	
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type	Pulsarieaden Leter Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1	Proposel-2 Polymer	
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump information Quantity Manufacturer ype Model No.	Pulsarieaden Leter Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1	Proposel-2 Polymer	
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Model No. Maximum capacity	Pulsafeeder Later Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessive Cavity, Diaphragin 880. 2	Proposel 2 Polymer	gph
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Model No. Maximum capacity Discharge pressure	Pulsafeeder Later Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progesalvs Cavify, Diaphragm 6880. 2. 590 (rated): 87. (operating)	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem perminent Feed System Pump Information Quantity Asnufacturer Type Addel No. Assimum capacity Discharge pressure Hydraulic relief valve setting	Pulsafeeder Later Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 680: 2. 590 (rated), 87 (operating)	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem remical Feed System rump information Quantity Manufacturer Type Model No. Asximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction	Pulsafeeder Later Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progesalvs Cavify, Diaphragm 6880. 2. 590 (rated): 87. (operating)	Proposel 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem remical Feed System rump information Quantity Manufacturer Type Model No. Asximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns	Pulsafeeder Later Ceramic/PVG 1.0 with 2 pumps operating: Proposal 1 3 Pulsafeeder Progessivs Cavity, Diaphragm 680 590 (rated), 87 (operating) 100 PVC/PTFE	Proposed-2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump information Quantity Anufacturer Type Addel No. Asximum capacity Discharge pressure Hydraulic relief valve setting Asterials of construction Calibration Columns Quantity	Pulsafeeder Later Ceramic/PVG 1.0 with 2 pumps operating: Proposal 1 3 Pulsafeeder Progessivs Cavity, Diaphragm 680 590 (rated), 87 (operating) 100 PVC/PTFE	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump information Quantity Manufacturer ype Model No. Maximum capacity Discharge pressure hydraulic relief valve setting Materials of construction Culibration Columns Quantity Manufacturer Manufacturer Manufacturer	Pulsafeeder Later Ceramic/PVC 1:0 with 2 pumps operating: Proposal 1 3 Pulsafeeder Progessiva Cavity, Diaphragm 580 2 590 (rated), 87 (operating) 100 PVC/PTFE	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump information Quantity Anufacturer Type Addel No. Asximum capacity Discharge pressure Hydraulic relief valve setting Asterials of construction Calibration Columns Quantity	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 680: 2. 590 (rated): 87 (operating) 100: PVC/PTFE	Proposel-2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump information Quantity Manufacturer ype Model No. Maximum capacity Discharge pressure hydraulic relief valve setting Materials of construction Culibration Columns Quantity Manufacturer Manufacturer Manufacturer	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 680: 2. 590 (rated): 87 (operating) 100: PVC/PTFE	Proposel-2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump information Quantity Manufacturer Type Model No. Askimum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No.	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 680: 2. 590 (rated): 87 (operating) 100: PVC/PTFE	Proposel-2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Model No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 680: 2. 590 (rated): 87 (operating) 100: PVC/PTFE	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Asnufacturer Type Adodel No. Asximum capacity Discharge pressure Hydraulic relief valve setting Asterials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 880. 2. 590 (rated), 87 (operating) 100: PVC/PTFE* 3. Pulsafeeder WT/7034-PVC 0.053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Power consumption for this system/subsystem Power consumption for this system/subsystem Power consumption for this system/subsystem Power consumption for this system/subsystem Power consumption Powe	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 880. 2. 590 (rated), 87 (operating) 100: PVC/PTFE* 3. Pulsafeeder WT/7034-PVC 0.053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Model No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical injection Quili or Static Mixer	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 880. 2. 590 (rated), 87 (operating) 100: PVC/PTFE* 3. Pulsafeeder WT/7034-PVC 0.053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Annufacturer Type Model No. Asximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical injection Quili or Static Mixer Quantity Manufacturer Materials of construction	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 880. 2. 590 (rated), 87 (operating) 100: PVC/PTFE* 3. Pulsafeeder WT/7034-PVC 0.053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Model No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical Injection Quill or Static Mixer Quantity Manufacturer Materials of construction Chemical Injection Quill or Static Mixer Quantity Manufacturer Materials of construction Chemical Injection Quill or Static Mixer Quantity Manufacturer Materials of construction Strainers	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragin 680. 2 590 (rated), 87 (operating) 100: PVC/PTFE* 3. Pulsafeeder WT77034-PVC 0:053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Adodel No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Brainers Quantity	Pulsafeeder Lister Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1 3 Pulsafeeder Progessivs Cavity, Diaphragm 680 2 590 (rated); 87 (operating) 100 PVC/PTFE 3 Pulsafeeder WT/7934-PVC 0:053 PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem per consumption for this system/subsystem per consumption for this system/subsystem per consumption for this system/subsystem per consumption for this system/subsystem per construction per constructio	Pulsafeeder Later Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1 S Pulsafeeder Progessive Cavity, Diaphragm 680: 2 590 (rated); 87 (operating) 100: PVC/PTFE 3 Pulsafeeder VT77934-PVC 0:053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem pump information Quantity Manufacturer Type Model No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical injection Quili or Static Mixer Quantity Manufacturer Materials of construction Chemical injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No.	Pulsafeeder Ceramic/PVG T.0 with 2 pumps operating: Proposal 1 3 Pulsafeeder Progessivs Cavity, Diaphragm 580 590 (rated), 87. (operating) 100 PVC/PTFE 3 Pulsafeeder W777934-PVC 0.053 PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem pump information Quantity Manufacturer Type Model No. Asximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical injection Quili or Static Mixer Quantity Manufacturer Materials of construction Chemical injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Manufacturer Model No. Materials of construction	Pulsafeeder Later Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1 S Pulsafeeder Progessive Cavity, Diaphragm 680: 2 590 (rated); 87 (operating) 100: PVC/PTFE 3 Pulsafeeder VT77934-PVC 0:053: PVC	Proposel-2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump information Quantity Assurfacturer Type Adodel No. Assimum capacity Discharge pressure Hydraulic relief valve setting Asterials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Brainers Quantity Manufacturer Model No. Materials of construction Brainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves	Pulsafeeder Lister Ceramic/PVC 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragin 880. 22 590 (rated), 87 (operating) 100: PVC/PTFE* 3. Pulsafeeder WT77934-PVC 0.053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Model No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity	Pulsafeeder Lister Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 680: 2. 590 (rated): 87 (operating) 100: PVC/PTFE Pulsafeeder W/77034-PVC 0:053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Addel No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer	Pulsafeeder Lister Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Diaphragm 680: 2. 590 (rated): 87 (operating) 100: PVC/PTFE Pulsafeeder W/77034-PVC 0:053: PVC	Proposed 2 Polymer	gph psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Adodel No. Adaximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Calibration Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Manufacturer Model No.	Pulsafeeder Lister Ceramic/PVC m 1.0 with 2 pumps operating: Proposal 1 3. Pulsafeeder Progessivs Cavity, Disphragm 680: 2. S90 (rated); 87 (operating) 100: PVC/PTFE 3. Pulsafeeder W//7034-PVC 0:053: PVC N/A Pulsafeeder PVC/ Pulsafeeder PVC/ PUlsafeeder PVC/ PUlsafeeder PVC/ PVS/ PVS/ PVS/ PVS/ PVS/ PVS/ PVS/ PVS/ PVS/ PVS/	Proposed 2 Polymer	gph psig psig
Manufacturer Model No. Materials of construction Power consumption for this system/subsystem Pump Information Quantity Manufacturer Type Addel No. Maximum capacity Discharge pressure Hydraulic relief valve setting Materials of construction Columns Quantity Manufacturer Model No. Volume, gal Materials of construction Chemical Injection Quili or Static Mixer Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer	Pulsafeeder Selection Ceramic/PVG T.Q with 2 pumps operating: Proposal 1 Pulsafeeder Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Progessiva Cavity, Diaphragm Selection Selection Progessiva Cavity, Diaphragm Selection Selection Progessiva Cavity, Diaphragm Selection Selectio	Proposed 2 Polymer	gph psig

Pulsafeeder

Check Pulsafeeder

Туре Manufacturer

Model No.	The second of Later Control of the second of
Materials of construction	FVC/PVG
Power consumption for this system/subsystem	1.0 ★ (mixing chamber) With 2 hp hp

6.4.6 Filter Press Equipment

and the state of t	Proposal 1 Andritz Separation	Proposal 2	
anufacturer			
pe (Belt verse Plate and Frame)	Plate & Frame		
Quantity			
Model number	1000 mm filter pres	Applying the Section of the property of the page 1986 and the section of the sect	
rame Type (sidebar / overhead)	Side baz		
Automatic Plate Shifter, yes/no	yes	OF MARKET SECURITY OF THE PROPERTY OF THE PROP	
light Curtains, yes/no	yes (beth sides)		
Total volume	50		/pres
Number of plates	57	(1) 15-12-13 (1) 15 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16	
Design operating pressure	226		si
Plate size	1000 x1000	e legislation of the control of the	ım
Cake thickness	32mm		m
Overall Height			
Overali Width	127 (12 St.) 7 (2 St.) (10 St.)		
Overall Length	28		
Weight Empty	17500		
	23000		
Neight Operating			
influent sludge concentration			
Dry solids load	30		vhr
Belt press sludge throughput rate	N/A		3/ <u>mln</u>
Moisture in sludge cake	2011 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Density of sludge cake	75		/R3
Filter press filtrate solids	100		pm_
Floor Discharge Opening Required	225 x 46	FÅD, repsi	
Length	18,75	n (\$ 950)	
Width	3.83	文·尼·罗·克·克·克·斯特尔克尔 医克尔特氏 In	
Optional cake discharge devices	Gravity/Shaker		
Manifold Pipe Materials	FRP		
Manifold Valves	FRA	200	
	Mar Air	4. m 12. s. ma 3-402. St. 4445. 2. 4-10	
Manual - Manufacturer			
Manual - Type	NEX AIR		
Manual - Material of Construction			
Automatic - Manufacturer	MaxAir	VIETE PAGE EXCENSION IN A GEORGE	
Automatic - Type	Ball	CONTRACTOR STANCES	
Automatic - Material of Construction	FRP.		
Automatic - Operator Type	Air sclusted		
Automatic - Operator Manufacturer	Max Air		
Drip Pan / Bombay Door - Material of	Painted steel covered with	CONTRACTOR STATE OF THE SECOND OF	
Construction	polypropylena		
Frame - Material of Construction	Carbon Steel	CASE GREAT STATE STREET	
Plate feed style	Center		
	3	hn	
Total Cycle time	ŇA		
Fast Fill		mi	
Slow Fill	180	mi	
Core Blow	2	m	
Air Blow	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	mi	_
Press Oump	3.	m)	<u>in</u>
Filter Cloth Material	Polypropylene		
Filter cloth weight		oz	z,/yd
Filter cioth fiber type	Mono Multi		
Filter cloth weave type	Salven	1975年第15章 1597年1597年17月1日 1975年第15章 1597年1597年17月1日	
Filter cloth porosity	3.6		fm/ft
Total filtration area	978		
Hand held pendant, yes/no	light curtain		
Filter cloth weave type			
Manufacture's service trips	50.01		ays
	5. 5. 3. 3. 3. 3. 3. 3. 3. 3		ils
Coatings type / dry film thickness			
Core Blow Air Demand	30		m/psi
Air Blow Air Demand	30	cfr	m/psi
Belt width	NA	in	
Belt material			
High Pressure Cloth Wash, yes/no	yes yes		
Skid Mounted, yes/no	you		
Skid dimensions, L/W/H	5.8 × 7.6 × 3.2	n.	
Total Skid Weight	2500		

180	STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET,	min
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		gal
ESA		1
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	PROPERTY OF THE SAME THE COLOR	hp
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application and an arrangement	Transployed to the second	
	PRODUCTION OF THE PROPERTY OF	hp
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1.16	LE ANDER LE MESTE SE CONTROL DE LA CONTROL D	
	Light Automatic Color	
	The same of the state of the same	hp. %
NA (Indoor use)		-
Fybros		
1630 series 2 x 3 x 8		
Horizontal Centrifugal		
90		gpm
200 max		psi
FRP.		İ
FRP-VR-1A		I
1760	是这些的证明 是国家的。	
862 (silicar/silicar/316/viton)		I
John Crane	· · · · · · · · · · · · · · · · · · ·	
780		1
4-03-20-20-20-52-30-20-20-20-20-20-20-20-20-20-20-20-20-20		hp
Approved Supplier	Nav et has bestaled on a consistent	
460/3/60	See May and the Second Second	
ANSI	25-72-75-78-56-66-75-76-76-76-76-76-76-76-76-76-76-76-76-76-	
	Ling Morale (2005)	hp
网络拉克斯特斯 网络马斯斯斯斯斯斯斯斯斯斯		hp
AND THE RESERVE AND THE RESERV		
A Marie Commission of the Comm		
	and the same of th	
		hp, %
	ABEL HP-k-25 single-exting triplex, reciprocating 58 1450 C. Steel N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 N/A- 1800 1600 1600 1600 1600 1600 1600 1600	FRP: 1450 1450 1450 Bills Bills Bills Bills Bills Bills ABEU HR-k-256 single-acting triplex, reciprocating 59 1450 C.Steel NVA 1500 NVA NVA 1500 NVA NVA NVA NVA NVA 1500 150

Slow Fill Feed Pumps			
Quantity of Pumps	2	到的基本的基本的基本的基本是基础的。 第二章	3
Pump Manufacturer	ABLE		
Pump Model Number	HMD-G-32-0250-GU		
Pump Type	Double Acting Simplex		
Flow	90:		gpm
<u>Head</u>	Not specified		psi
Casing Material of Construction	Cast Iron with rubber lining	的,但是不是是自己的人,但是一个人的人。	1
impeller Material of Construction	2012年2月2日 (11) 10 11 11 11 11 11 11 11 11 11 11 11 11		<u> </u>
RPM	1750	建筑在建设的实际的现在分词的	
Mechanical Seal Type		对 证据 表现在1000年代的1000年度1000	1
Mechanical Seal Manufacturer		er encerage de transfération de la fille	1
Flush/seal water demand per pump			gom
Motor Manufacturer / Model	History Consult Care Made to St		1
Voits / phase / freq	460/3/60		
Design standards (e.g., NEMA/IEEE, IEC)	gradication with the probability		1
Driven equipment maximum brake hp		I factorial and a constraint	hp
Motor nameplate			hp
Service factor (NEMA/IEEE motors only)		。 [1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	
Motor bearing type			1
Motor efficiency at nameplate			hp, %
Bearing lubrication system			
Space heater rating (watts / voltage /	N/A (Indoors)		<u> </u>
Press Fully Assembled on Shipment yes/no	yes		
luantity of Spatulas Provided	2.5		
Local Control Panels	Press mounted		<u></u>
Panel size (L x W x H)	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		ft and in
Panal approximate weight	在自己的 医克里克氏病 医阴道炎 医阴道炎		lbe
Manufacturer	The state of the s	。 [1] [1] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2	
Programmable Logic Control System	year year		<u> </u>
Manufacturer	A6		
Model No.	27.7.2.10万元,200.67.200.200.200.200.200.200.200.200.200.20	。 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年 - 1985年	
Filter Press Platform	2.53 李世代《····································		
Required (yes/no)	DATE TO SELECT A SECURITY.	THE PROPERTY OF THE PROPERTY O	
Platform dimensions, L x W x H	(M) (对) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A		ft and in
Materials of construction			
Structural members not to exceed reaction on	ARTER STEEL CO. SEE TO THE LET WE		lbs

6.4.7 Slurry Pumpe

	Proposal 1	Proposal 3	
Slurry Pump	Ciarifler Blowdown	Sump Pumps A & B	
Pump manufacturer	Metpro - Pybroc		
Model No.	5500 aump		
Туре	Vertical Sump	MINORAGE WITH THE PARTY	
Connections, size, in./flange class			Ī"
Suction	2	Part to the section of the section o	
Discharge			
Net weights			†
Total pump assembly	Later -		lb
Pump (less motor)	Later		lb
Baseplate	Later		jb.
Performance Data			
Rotative speed	1750	DESIGNATION OF COMMEN	гргп
Tip speed	"我就我们还看到那里。" "我们就我们还看到那里的一个人的人们也可能把这个人的人们	建筑建设设施,建筑建设设施	ft/sec
Direction of rotation available as viewed from the		可能性 医克里氏 医克里氏征 医克里氏征	
Guaranteed performance			
Capacity at design conditions	30 HARAGE TO STATE OF THE STATE		gpm
Total head at design conditions	是"大学"的"大学"的"大学"的"大学"的"大学"。	Made a say to a say we wan	ft
NPSH required at design conditions, relative to	3.26		ft
Pump efficiency at design conditions	30	第四次中国企业的公司,但是企业方面企业企业	%
Maximum solid size pump can pass		10.00 mm 有证金帐户400 mm。	ín
Maximum shutoff head	94.5		ft
Power requirements			
At design conditions	1.96	Problems and the second	ho
At shutoff			hp
Maximum			hp
Flow rate at which maximum power requirement	51.8		gpm
Recommended minimum continuous flow	7.36		gpm
Recommended maximum continuous flow	Later	STORY TO STORY AND ADDRESS OF THE STORY OF T	gpm
Seal water cooling water flow required & pressure			gpm & psi

Seal injection water quality requirements	Later State of the Control of the Co		
Impeter diameters	Property and the second	and the first three stowers of the control of the c	
Design	9.125		jin.
Maximum available			in.
Minimum available	P\$ 800 2.27 200 200 2015 2018 3018 3018 3018 3018 3018 3018 3018 3	t de la company de la company de la company de la company de la company de la company de la company de la comp	ln.
Materials			<u> </u>
Casing			ļ
Casing liner	PART CALL CALL		
Shaft Impeller	FRP VR-IA		1
Shaft sleeves			
Impeller wearing rings			
Casing wearing rings	**************************************		
Mechanical shaft seal(s)			3
Type of bearings		to branch Character Branch at 147 September 200 September	
Radial	MARIO VERMINO PERMINO PERMINO		
Thrust	sten i terrios traditado do proces		
Description of bearing lubrication system and			1
Mechanical shaft seal			
Manufacturer	的主题研究所加多信息增加的		
Model No.			1
Shaft diameter			
At bearing location(s)			in.
At seal location(s)	在表示。 第二十二章 第二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十		in.
Siseve, outer diameter			in.
Coupling			
Manufacturer	Fybrog		
Model No.			
Rated power, hp/service factor			<u> </u>
Other Data			
List of special tools that will be furnished			1
Field assembly work required			ļ
Direct Orive or V-belt Drive	Direct Drive	1.4% E-42.00 [14] [4] [4] [4] [4] [4] [4] [4] [4] [4] [<u>L.,</u>
Al B	Proposal 1	Proposei 2	T
Slurry Pump	wastewater Claritier S	ludge Pumps A, B, C, & D	
Pump manufacturer Model No.	The NA		
Туре			
Connections, size, in./flange class	188 1861 1881		
Suction	Magnetic Review posters y supplied the services.	。 《大學學》 1885年	
Discharge	Company of the Section of the Sectio	President social communication	
Net weights	2		
· · · · · · · · · · · · · · · · · · ·			
			lb
Total pump assembly Pump (less motor)			lb lb
Total pump assembly			lb
Total pump assembly Pump (less motor)			lb Ib
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed			lb Ib
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed			lb Ib
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or			ib ib rpm
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and			ib ib rpm
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise)			ib ib rpm
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance			ib ib rpm ft/sec
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions			ib ib rpm ft/sec
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions			ib ib rpm ft/sec
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions, relative to			ib ib rpm ft/sec
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line			ib ib rpm ft/sec apm ft
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions			ib ib rpm ft/sec
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Madmum solid size pump can pass			ib ib rpm ft/sec apm ft ft
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Madmum solid size pump can pass Madmum shutoff head			ib ib rpm ft/sec
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Madmum solid size pump can pass			ib ib rpm ft/sec gpm ft ft
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Maximum solid size pump can pass Maximum shutoff head Power requirements			ib ib rpm ft/sec gpm ft ft
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Maximum shutoff head Power requirements At design conditions			ib ib rpm ft/sec gpm ft ft ft ft hp
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip apeed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guarantsed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Maximum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff Maximum Flow rate at which maximum power requirement			Ib Ib Irpm It/sec gpm ft ft ft hp
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise) or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions NPSH required at design conditions Maximum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff Maximum			ib ib rpm ft/sec gpm ft ft ft % in ft hp hp
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip apeed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guarantsed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Maximum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff Maximum Flow rate at which maximum power requirement			ib ib rpm ft/sec gpm ft ft hp hp hp gpm gpm
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise) or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Maximum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff Maximum Flow rate at which maximum power requirement Recommended minimum continuous flow Seal water cooling water flow required & pressure			Ib Ib If Ip If I
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise) or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions NPSH required at design conditions Madmum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff Maximum Flow rate at which maximum power requirement Recommended minimum continuous flow Seal water cooling water flow required & pressure Seal injection water quality requirements			ib ib rpm ft/sec apm ft ft ft % in ft hp hp hp gpm gpm
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise) or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions, relative to pump shaft center line Pump efficiency at design conditions Maximum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff Maximum Flow rate at which maximum power requirement Recommended minimum continuous flow Seal water cooling water flow required & pressure			Ib Ib If Ip If I
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions Maximum shaft center line Pump efficiency at design conditions Maximum shutoff head Power requirements At design conditions At shutoff Maximum Flow rate at which maximum power requirement Recommended minimum continuous flow Recommended maximum continuous flow Seal water cooling water flow required & pressure Seal injection water quality requirements Impelier diameters Design			Ib Ib If Ip If It Ip If If I
Total pump assembly Pump (less motor) Baseplate Performance Data Rotative speed Tip speed input shaft end of the pump (Clockwise or Counterclockwise) or Clockwise and counterclockwise) Guaranteed performance Capacity at design conditions Total head at design conditions NPSH required at design conditions NPSH required at design conditions Maximum solid size pump can pass Maximum solid size pump can pass Maximum shutoff head Power requirements At design conditions At shutoff Maximum Flow rate at which maximum power requirement Recommended minimum continuous flow Recommended minimum continuous flow Seal water cooling water flow required & pressure Seal injection water quality requirements Impeller diameters			ib ib rpm ft/sec gpm ft ft hp hp hp gpm gpm gpm gpm gpm gpm gpm gpm gpm gp

Materials				
Casing	(1) 学校学品等基础			
Casing liner			NEW THE PARTY OF T	
Shaft				
Impeller	 Profit (a) 1 Profit (4 PM) 	國 医细胞病 非被引用的影响性的		
Shaft sleeves				<u> </u>
Impeller wearing rings				<u> </u>
Casing wearing rings	22 (45) attach	1850 1850 180 18 18 18 18 18 18 18 18 18 18 18 18 18		<u> </u>
Mechanical shaft seal(s)		为是"证实公共共变"	加热的地位的地位的地位的	<u> </u>
Type of bearings	*	. 2 5 1/25 2 20 5 20 20 20 20 20 20 20 20 20 20 20 20 20		<u> </u>
Radial	Carry Managarian			<u> </u>
Thrust		A STANDARD OF THE STANDARD		1
Description of bearing lubrication system and		KARE ENGINEE		
Mechanical shaft seal		Control of the Contro		
Manufacturer Model No.				-
Shaft diameter	CASC IN TOUR DESIGNATION	with the end of the last	在1992年,在1995年,1992年(1992年)	ļ
	Telegraphic and controls a	Processor continue activity in	I BONNES TO SERVICE SE	ļ
At bearing location(s) At seal location(s)	with the west of the largest the			iln.
Sleeve, outer diameter	ARCHAR FINITED			in.
Coupling	a carrie biraci, su l'ourgaus	2777-114-28-28-28-28-28-28-28-28-28-28-28-28-28-	Programme Complete Committee Committ	lin.
Manufacturer Manufacturer	ASSTRUCTURES SZET	(A) (A) (A) (A) (A) (A) (A) (A) (A) (A)		
Model No.			November of the state of the st	
Rated power, hp/service factor				
Other Data				
List of special tools that will be furnished				-
Field assembly work required	Concession			
Direct Drive or V-belt Drive				
	La company of the contract of	osal 1	Proposel 2	L
Slurry Pump	Ţ <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		d Pumps A & B	T
Pump manufacturer	Metoro	Fuhron		
Model No.	1500 Seri	es Groun 2		
Туре	Horizonial	Centrifunal		
Connections, size, In./flange class			The state of the s	
Suction				
Discharge	39.545-左上发出E	2		
Net weights				
Total pump assembly	2000年4年4年1日 1	iter in the second		lb
Pump (less motor)	17. 1987年 文字集 区		的证据。在2016年中国来源于1916年的企业的企业的	lb
Baseplate	K Profile 5 18 L	iter -	en en en en en en en en en en en en en e	lb
Performance Data				
Rotative speed	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	50	克尼尼尼州州北京市福州州州州北京	rpm
Tip speed		事权 经支收银票		ft/sec
input shaft end of the pump (Clockwise or				
Counterclockwise or Clockwise and	Countercloc	kwise facing		
counterclockwise)	suction	r flange.	自然的"自然"的"的"的"自然"的"自然"的"自然"的"自然"的"自然"的"自然	
Guaranteed performance	1			
Capacity at design conditions	Section of the sectio	00 F. S. N. N. S. S. S. O.		gpm
Total head at design conditions	- 40 Strain - 2	00 28 48 19		ft
NPSH required at design conditions, relative to	计 表现象数据			
pump shaft center line	Outback and the first	Turk in the contract of the co		ft
Pump efficiency at design conditions	2-2-1 (N.L. 12-13, 5)	4. 表示的 的复数的		%
Maximum solid size pump can pass	ELTRAGE LAND	a de la visió estableca de la constanta de la		in .
Maximum shutoff head	或方法等等等。	engarda Chall	Critical Control of the Control of t	ft
Power requirements At design conditions	 	RANGE CONTROL		<u> </u>
At design conditions At shutoff	2 .	53		hp
Maximum Maximum	industrial Control (Control C	16	r volumen en beske verske blever en beske blever. Franklike blever verske beske beske beske blever.	hp
Flow rate at which maximum power requirement			中国的特殊。1987年,1987年	hp
Recommended minimum continuous flow	2:	21 s.		gpm gpm
Recommended maximum continuous flow		08		gpm
Seal water cooling water flow required & pressure		TRANSPORT NAME OF THE PARTY.		gpm & psi
Seal injection water quality requirements		grafika aran	Employed Anti-Self-processing	Photo or has
Impeller diameters		······································	The second section of the section of the sect	
Design	CONTRACTOR A	28*/***		in.
Maximum available	医乳腺管 经分类 类			in.
Minimum available	94574448653	91350 008 39		in.
Materials	1			 :
Casing	FREN	/R-1A	Karen ekan basi belahir keral	
Casing liner	FRA\	/R-1A		
Casing liner Shaft		/R-1A		
Casing liner	FRP\	/R-1A /R-1A		

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	Yes

6.4.8 Vertical Pumps

	Proposal 1	Proposal 2	
ump	Filter Backwas	sh Pumpe A & B	1
Manufacturer	Metoro Pybroc		1
Model No.	5500 Series - 3600	[2]中国40克利斯克里斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯克斯	1
Type (turbine, sump, etc.)	Vertical Sump		:
Number of stages, each pump			
Discharge connection size/fiange class	The state of the s		ln
Net weight, sech	一种企业中国的经验等的基础是 自动强势	Publisher Colleges Carry Carry	lb
Pump	White Control and the state of the control of the c		lb
Motor			lb
Total, pump including motor, baseplate, and coup	d Later		lb
Performance Data			
Rotative speed	35002	The state of the second of the	rpm
Minimum distance required from bottom of suction beil to bottom of pit, ft			
Recommended minimum continuous flow	94:3		gpm
Guaranteed performance (each pump)	450		gpm
Capacity at design conditions	450		gpm
head losses through the pump			ft H₂C
Submergence required at design conditions			
(from water surface to bottom of suction beil)	22.5		ln
bell at design conditions	Laier		ft H ₂ O
Pump efficiency at design conditions	70.2		%
Motor efficiency at design conditions	发展的 医克里克斯氏氏 医克里克斯氏		%
Maximum shutoff head	2/: 2/: 2/: 2/: 2/: 2/: 2/: 2/: 2/: 2/:	Mark the second second second	ft H₂O
Power requirements	The second of th	Topic of it was an insensition of the part of the property of the property of the	-
At design conditions	124 124 124 124 12 1 1 1 1 1 1 1 1 1 1 1	MARKETS SERVICE STATE OF THE RESERVE	hp
At shutoff			hp
Maximum	47.1		hp
Pump Construction	FRE		1
Impeller diameters		Constitution and the second contraction of the second	1
Design	7.625	的图象主义的一种证明的图像中央主义 的	in.
Maximum available			in.
Minimum available	PERSONAL AND A CONTRACTOR		in.
Materiais			
Column	PRRESENTATION		
Discharge head	下。在1950年中 FRE 多数是特殊多数	Band 1996年李红龙公文2015年1976年1	
Bowls, volutes, and diffusers	FRE	Barta 1985年 Bartan 1985年 1985年 1986年 1986年 1986年 1986年 1986年 1986年 1986年 1986年 1986年 1986年 1986年 1986年 1986年 1	
Shaft	Hastelloy C	Mandalan Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah	
Impeller	FRR	A THE PROPERTY OF THE PARTY OF	
Impelier wearing ring		在4000000000000000000000000000000000000	
Casing wearing ring			
Shaft sleeves			
Suction beli			
Suction strainer			
Shaft diameter			ín.

Length of sections	(1) 10 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	4	in.
Length from baseplate to bottom of suction	96		in.
Line shaft bearings		No value of the second	
Туре	Thrust		<u> </u>
Number			
Length			
Material	Carrier Anna Carrier San San San San San San San San San San	Patrick Confederal Process and State	
Bowl bearings			
Туре	■Mana 745 or by September 2015 1875 1875	基础的企业的企业的基础的企业	
Number	· 多年的 图15 图25图2 全国的企业	1888年1月2日 - January 1898年1月2日 - 1888年1月2日 - 1888年1月2日 - 1888年1月2日 - 1888年1月2日 - 1888年1月2日 - 1888年1月2日 - 1888年1	1
Length		表表的是是一种特别的表现实	
Material	e de la lace de la companyon de la companyon de la companyon de la companyon de la companyon de la companyon d		
Description of line shaft bearing lubrication		Control of the same of the sam	
system, including required quantity of externally			
supplied bearing lubrication water, if applicable			
Description of bowl bearing lubrication system.			-
	上 的是是一个证明的最后的企业。		ļ
including required quantity of externally supplied			}
bearing lubrication water, if applicable			
quantity of externally supplied seal water, if	A Comment of the second of the second of	recorded to a second	
applicable			
Motor Data			l
Manufacturer	Later		
Enclosure			
Horsepower at design conditions			hp
Service factor	STATES TO THE PARTY OF THE PARTY OF THE PARTY.		
Voltage/Phasa/RPM	D. 数据 1863 1965 1964 1988 1988 1988 1988		
Miscellaneous Data	Verter legal and deliverance by	PROPERTY OF THE PROPERTY OF TH	
Shipping weight (each pump assembly if more			ь
	Proposal 1	Proposel 2	lio
ump		umps C & D	r
willp		umps CaD Note: :: ::::::::::::::::::::::::::::::::	

Manufacturer	MetPro-Fybrocu		<u> </u>
Model No.	5500 2x3x13	Paragraphic and a property of the property of	
Type (turbine, sump, etc.)	Vertical Sump	LEAD TO BE CONTINUED IN THE	
Number of stages, each pump	Control of the Cartier Control	CALCAR OF SERVICE SALES SERVICES	
Discharge connection size/flange class	2/150#	2000年中央市场(A)市场(A)	in
Net weight, each			!b
Pump	Later		lb
Motor	Later		ib
Total, pump including motor, baseplate, and coup	Leters	A STATE OF THE WAY SEED SAINTER OF THE	lb
Performance Data			
Rotative speed	1750		rpm
Minimum distance required from bottom of			
suction bell to bottom of pit, ft	48		
Recommended minimum continuous flow	59.5		gpm
Guaranteed performance (each pump)	200		
Capacity at design conditions	200		gpm
*	The Control of the Co	The second secon	gpm
head losses through the pump		Consequence of the second second	ft, H ₂ O
Submergence required at design conditions	FEMORIAL POLICE STATES	Company of the Compan	
(from water surface to bottom of suction beil)	22.5		in
bell at design conditions			ft H ₂ O
Pump efficiency at design conditions	554		%
Motor efficiency at design conditions			%
Maximum shutoff head	121		ft H ₂ O
Power requirements			
At design conditions	10.0		hp
At shutoff	Bit Company Tolk Company Company Company		hp
Maximum	11.8-4		
Pump Construction	FRP VR-1A		· 10
mpeller diameters	The state of the s		
	LINES COURT OF A PROPERTY OF THE STATE OF		i
) //PRINCE[7]	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Entered the October State State State State State	H).
Design Maximum avaliable			нП.
Maximum avaliable			-
Maximum avaliable Minimum available			in.
Maximum avaliable Minimum avaliable Vaterials			in.
Maximum avaliable Minimum avaliable Materials Column			in.
Maximum avaliable Minimum avaliable Vaterials Column Discharge head	FRE		in.
Maximum available Minimum available Materials Column Discharge head Bowls, volutes, and diffusers	FRE		in.
Maximum available Minimum available Materials Column Discharge head	FRP		in.
Maximum available Minimum available Materials Column Discharge head Bowls, volutes, and diffusers	FRE		in.

Impeller wearing ring Casing wearing ring

Shaft sleeves	TO THE SERVICE OF THE SERVICE OF AN ARCHITECTURE	PROPERTY OF STANK OF PROPERTY.	-
Suction bell			
	residente (18 f. 1966), etc. (1967), etc. (1967), etc. (1967), etc. (1967), etc. (1967), etc. (1967), etc. (19 19 f. 1967), etc. (1967)		<u> </u>
Suction strainer		Principal Services	
Shaft diameter			in.
Length of sections		11 12 13da - 12,2 - 31,241,37 12C2 12 11 11 C	in,
Length from baseplate to bottom of suction			in.
Line shaft bearings	Posta de 2000 de la competit de la competit de la competit de la competit de la competit de la competit de la c		
Type	Thrust		ļ
Number			ļ
Length			ļ
Material	と同名の書画の理解を含まれた。	भूति विकास विकास सम्मानिक स्था	
Bowl bearings			ļ
Туре	CONTRACTOR AND CONTRACTOR		
Number			
Length			
Material	一名名 国外等的 的复数异形似聚族形式		
Description of line shaft bearing lubrication	et perende i diet di givet de a	viete a la contra di est el con	1
system, including required quantity of externally			
supplied bearing lubrication water, if applicable			1
Description of bowl bearing lubrication system,		CONTRACTOR OF THE PARTY OF THE	
including required quantity of externally supplied			
bearing lubrication water, if applicable			
quantity of externally supplied seal water, if			
applicable	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		<u> </u>
Motor Data			
Manufacturer	Later		
Enclosure	NEMA TEFC		
Horsepower at design conditions	200 444	(基础的) #14576年以下4007年,1674年,1674年,1674年,1	hp
Service factor			
Voltage/Phase/Frequency	460/3/60		
Miscellaneous Data	5000年第0年時度8月8日1日日日本	ngalipy-kalangasib ng-nggas-ngasiba	
Shipping weight (each pump assembly if more	Later		1b
	Proposal 1	Proposal-2	
Pump	Dirty Backwash Su	mp Pumps A & B	
Manufacturer	Fybrod :		
Model No.	5500 1 x 2 x 10	POST PROPERTY AND TO SELECT A SECOND SECURITY OF THE SECOND SECURITY OF THE SECOND SECURITY OF THE SECOND SECURITY OF THE SECOND	
Type (turbine, sump, etc.)	5500 1 x 2 x 10 Vertical Sump	E British Kalekork Europa (C. 1971)	
Number of stages, each pump		Abelia de Perenta da las mediacións	
Discharge connection size/flange class			in
Net weight, each	Loto Control of the C	A CANAL PARTY AND A CANAL	lb.
Pump	Later	ja lakai pi katanta katika	lb
Motor	Later		ĺþ
Total, pump including motor, baseplate, and coupl	Later		1b
Performance Data			
	The Republic Property of the State of the St		
Rotative speed			rpm
Minimum distance required from bottom of			<i>r</i> pm
Minimum distance required from bottom of suction bell to bottom of pit, ft	8		rpm
Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow	6.98		грт gpm
Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow Guaranteed performance (each pump)	5 6.98 20		
Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow	5 6.98 20		gpm
Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow Guaranteed performance (each pump)	5 6.98 20		gpm gpm
Minimum distance required from bottom of suction bell to bottom of pit, fit. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions.	6 6.96 20 20		gpm gpm gpm
Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow Guaranteed performance (each pump) Capacity at design conditions head losses through the pump	6 6.98 20 20 20		gem gem gem ft. H ₂ O
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions. (from water surface to bottom of suction bell).	6 6.98 20 20 20		gpm gpm gpm
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction beil). bell at design conditions.	6 6.98 20 20 20		gpm gpm gpm ft. H ₂ O in
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions.	6 6.98 20 20 20		gpm gpm gpm ft. H ₂ O in ft H ₂ O
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions.	6 5.98 20 20 20		gpm gpm gpm ft. H ₂ O in ft H ₂ O %
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Madmum shutoff head.	6 6.98 20 20 20		gpm gpm gpm ft. H ₂ O in ft H ₂ O
Minimum distance required from bottom of suction bell to bottom of pit, fit. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions. (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head.	6 6.98 20 20 20 22.5		gpm gpm gpm ft. H ₂ O in ft H ₂ O %
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head.	\$ 5.98 20 20 20 22.5		gpm gpm gpm ft. H ₂ O in ft H ₂ O % %
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions. (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff.	6 6.08 20 20 20 22.5		gpm gpm gpm ft. H ₂ O in ft H ₂ O % ft H ₂ O
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum.	6 6.08 20 20 20 22.5		gpm gpm gpm ft. H ₂ O in ft H ₂ O % ft H ₂ O
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction beil). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum.	\$ 6.98 20 20 20 22.5 73.8		gpm gpm gpm ft. H ₂ O in ft H ₂ O % ft H ₂ O
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum. Pump Construction.	6 6.98 20 20 20 22.5		gpm gpm gpm ft. H ₂ O in ft H ₂ O % % ft H ₂ O
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum. Pump Construction. Impelier diameters. Design.	6 6.98 20 20 20 22.5 73.8		gpm gpm gpm ft. H ₂ O fn ft H ₂ O % % ft H ₂ O hp hp
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum. Pump Construction. Impelier diameters. Design.	\$ 5.98 20 20 20 20 20 20 20 20 20 20 20 20 20		gpm gpm gpm ft. H ₂ O in ft H ₂ O % % hp hp hp hp in. in.
Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow Guaranteed performence (each pump) Capacity at design conditions head losses through the pump Submergence required at design conditions (from water surface to bottom of suction bell) bell at design conditions Pump efficiency at design conditions Motor efficiency at design conditions Maximum shutoff head Power requirements At design conditions At shutoff Maximum Pump Construction Impelier diameters Design Maximum available Minimum available	\$ 5.98 20 20 20 20 20 20 20 20 20 20 20 20 20		gpm gpm gpm ft. H ₂ O in ft H ₂ O % % ft H ₂ O hp hp
Minimum distance required from bottom of suction bell to bottom of pit, fit. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum. Pump Construction. Impelier diameters. Design.	6 6.98 20 20 22.5 22.5 73.6 1.38		gpm gpm gpm ft. H ₂ O in ft H ₂ O % % hp hp hp hp in. in.
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum. Pump Construction. Impelier diameters. Design. Maximum available. Minimum available. Materials.	6 6.98 20 20 20 22.5 73.5 1.38		gpm gpm gpm ft. H ₂ O in ft H ₂ O % % hp hp hp hp in. in.
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum. Pump Construction. Impeller diameters. Design. Maximum available. Minimum available. Minimum available. Materials. Column. Discharge head.	6 6.98 20 20 22 22.5 73.8 1.38 1.38 5.125		gpm gpm gpm ft. H ₂ O in ft H ₂ O % % hp hp hp hp in. in.
Minimum distance required from bottom of suction bell to bottom of pit, ft. Recommended minimum continuous flow. Guaranteed performance (each pump). Capacity at design conditions. head losses through the pump. Submergence required at design conditions (from water surface to bottom of suction bell). bell at design conditions. Pump efficiency at design conditions. Motor efficiency at design conditions. Maximum shutoff head. Power requirements. At design conditions. At shutoff. Maximum. Pump Construction. impeller diameters. Design. Maximum available. Minimum available. Materials.	6 6.98 20 20 20 22.5 73.5 1.38		gpm gpm gpm ft. H ₂ O in ft H ₂ O % % hp hp hp hp in. in.

Impeller			
impeller wearing ring			1
Casing wearing ring			1
Shaft sleeves	图10 16 16 16 16 16 16 16 16 16 16 16 16 16		
Suction beli	的特別整定。可以 是是 自己的	· 14年的新疆,15年15日,15年15年15日,15年15年15日,15年15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年15日,15年1	
Suction strainer			1
Shaft diameter		Light Continues to the last	in.
Length of sections			ln.
Length from baseplate to bottom of suction	· 探告:[4] [5] [6] [6] [6] [6] [6] [6] [6] [6] [6] [6		in.
Line shaft bearings			
Туре	Sand Cate Thruston	Designation and the Williams of the	
Number	The second second second	ENGINE PROPERTY OF SOURCE	
Length			
Material	A the way to a decide a second		
Bowl bearings	A Section 18 Section 1	The second secon	-
Туре			<u> </u>
Number			
Length			
Material			
	The state of the s		<u> </u>
Description of line shaft bearing lubrication	Strate Section Control of the Control of the	TEST (1995) 100 (1995) 100 (1995) 100 (1995) 100 (1995) 100 (1995) 100 (1995) 100 (1995) 100 (1995) 100 (1995)	j
system, including required quantity of externally	· S. R. P. S. A. A. A. A. A. A. A. A. A. A. A. A. A.	ed and make each a fire	
supplied bearing (ubrication water, if applicable		B. 30 Sept. 100	
Description of bowl bearing lubrication system,		EZ-GARLESIAN KATALIKA	
including required quantity of externally supplied			
bearing lubrication water, if applicable			
quantity of externally supplied seal water, if	The state of the s]
applicable	。 第二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十	Per and the second seco	
Motor Date	Later		
Manufacturer	The Residence of the state of t	是1600年1620年1620年1630年1630年	
Enclosure	NEMA	Berender und Dragonich (* 1813).	
Horsepower at design conditions	Committee that the state of the	を表現である。 大学 大学 はいまい はいかい はい	hp
Service factor	13 (14 Carlotte 14		l
Voitage/Phase/RPM	460/3/60	NOTES OF STATE OF STATE OF STATE OF	l .
Miscelianeous Data	Later		
Shipping weight (each pump assembly if more	Later	A CONTRACTOR OF THE STATE OF TH	lb
	Proposal 1	Propossi-2	
Pump	Elitrata Cumo		
i <u>r anil</u> e		Pumps A & B	Į.
Manufacturer	N/A	Pumps A & B	
	N/A	water a live water to the contract of the contract of	
Manufacturer Model No.	N/A		
Menufacturer Model No. Type (turbine, sump, etc.)	N/A		
Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump	NA A		in
Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/flange class	NA A		in the
Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/flange class Net weight, each	NA A		lb
Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/flange class Net weight, each Pump	NA A		ib Ib
Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/flange class Net weight, each Pump Motor	NA .		ib Ib
Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/fiange class Net weight, each Pump Motor Total, pump including motor, baseplate, and coupl	NA .		ib Ib
Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/flange class Net weight, each Pump Motor Total, pump including motor, baseplate, and coupl Performance Data	NA Description		ib ib ib
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Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/flange class Net weight, each Pump Motor Total, pump including motor, baseplate, and coupl Performance Data Rotative speed Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow Guaranteed performance (each pump) Capacity at design conditions head losses through the pump Submergence required at design conditions (from water surface to bottom of suction bell) bell at design conditions Pump efficiency at design conditions Motor efficiency at design conditions Motor efficiency at design conditions Maximum shutoff head Power requirements At design conditions	NA		Ib Ib Ib Ib Ib Ip Ip Ib Ib Ib Ib Ib Ib Ib Ib Ib Ib Ib Ib Ib
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Manufacturer Model No. Type (turbine, sump, etc.) Number of stages, each pump Discharge connection size/flange class Net weight, each Pump Motor Total, pump including motor, baseplate, and coupl Performance Data Rotative speed Minimum distance required from bottom of suction bell to bottom of pit, ft Recommended minimum continuous flow Guaranteed performance (each pump) Capacity at design conditions head losses through the pump Submergence required at design conditions (from water surface to bottom of suction bell) bell at design conditions Pump efficiency at design conditions Motor efficiency at design conditions Maximum shutoff head Power requirements At design conditions At shutoff Maximum Pump Construction Impeller diameters Design Maximum available Minimum available			ib ib ib ib ib ip ip gpm gpm gpm gpm ft. H ₂ O ft H ₂ O ft H ₂ O hp hp hp hp in. lin.

Discharge head				
Bowls, volutes, and diffusers				
Shaft	3 S. J. C. 23			
Impeller				
Impeller wearing ring			经分别等分别的 医多克克氏	
Casing wearing ring				
Shaft sleeves		第6 7年的日本		
Suction bell			发生的是是对于一种的人的人们的人们的人们的人们们们们们们们们们们们们们们们们们们们们们们们们们	L
Suction strainer	[] 网络图图图	特别的汉文 是是		
Shaft diameter	可以是其他的	的不是一种的 法		in
Length of sections	是上海产生	治艾克斯克斯特氏试验	特别的企业主义	in.
Langth from baseplate to bottom of suction				ln.
Line shaft bearings				
Typ●	With the Ship of			<u> </u>
Number	美国的公司和科特的			
Length			A. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C. A. C.	
Material				
Bowl bearings	1			
Туре	在學典學是對於實際	的特別學學學	the company of the control of the co	
Number	清整合业等等	APPENDAGE OF		
Length	"我们就来多数 "	发育性的现在分 点。		
Material			The first of the street poor is the sa	<u> </u>
Description of line shaft bearing lubrication system, including required quantity of externally supplied bearing lubrication water, if applicable				
Description of bowl bearing lubrication system, including required quantity of externally supplied bearing lubrication water, if applicable	241.			
quantity of externally supplied seal water, if applicable				
Motor Data	100 Control of 100 May 180			ļ
Manufacturer	E19690485086125			 -
Enclosure	Constitution of		Market State of the Control of the C	
Horsepower at design conditions	Manager Property	न्देश्य न व्यक्तिकात्रका <u>व</u>	PARTICION SECTION DE LA PROPERTIE DE LA PORTIE DE LA PROPERTIE DE LA PROPERTIE DE LA PROPERTIE DE LA PROPERTIE DE LA PORTIE DEPURITE DE LA PORTIE DE LA PORTIE DE LA PORTIE DEPURITE DE LA PORTIE DE LA PORTIE DE LA PORTIE DEPURIT DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE DE LA PORTIE	hp
Service factor		de Augusta	AS TREE BOOK STATE OF SERVICE STATE OF SERVICES	
Voltage/Phase/RPM	estable des	SECTION OF THE		
Miscellaneous Data	Participation			
Shipping weight (each pump assembly if more	Control Control	4、西南南南	AND THE PROPERTY OF THE PARTY O	lb

6.4.9 Main Control (PLC) Panel

	Proposal 1	Proposal-3
Panel description	NEMA-12, painted CS (See proposal Section I)	
Panel size (L by W by H)	87"(F1) x:168"(VV) x:32"(D) Prefiningly Estimate	n.
Panel approximate weight	4000 lbs Preliminary Estimate	lb
Manufacturer	Control Design Inc. / Machine Control Systems	

6.4.10 Master - Programmable Logic Control System

	Proposal 1	Proposal 2
Manufacturer	Allen Bradley	
Model No.	Control Logix	
Dimensions (overall, L x W x H)	Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Salar Sa	π
Weight	Later	ENERGY THE HERE AND AND AND BOOK BOOK BOOK BOOK BOOK BOOK BOOK BOO

6.4.11 Shop Febricated Tanks

	Proposal 1	Proposal-2
Tank name	Sulfurio Acid S	itorage Tank
Shell material	Cartion Stee	2012年第20日本第二年第二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十
Plate thickness		
Shell	12 mm	2. 19 16 16 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.
Head or bottom	Zalan Later Archive	in.
Head or top	Leteral	in
Dry weight, each	ater	Secretary Care Ib
Gasket material	Later	
Describe the amount of field erection work	Later	
Vent Dryer		
Manufacturer	Later	
Model Number	ater	
Overflow Check Valve		

Manufacturer		[2017] 전 [2017] [2017] H. H. H. H. H. H. H. H. H. H. H. H. H.
	10.00 10.00	[환경, 원급환자 기업 1 전 번, 25년 2년 1년 1월 1일 1일 1일 1
Model Number	네이스 아이는 아이는 아이를 바로 바로 하는 것이 하는 이 것입니다.	장사이는 지역 전투에 문제되면 하면 하는 것으로 하는 경험적으로 함께 보고 있다.
Moder Martiner	The state of the Later that the state of the	Provide talance trade in the contract of the c

6.4.12 Fibergiass Reinforced Plastic Tanks 🐇

	Proposal 1	Proposal 2	
ank	Desaturation Tanks A & B		
Manufacturer	Gustomer approved (Augusta;	的基础是是不是由于中国国际的	
			1
Tank type (open vs closed top)	Open Tank		
Tank residence time (if applicable)	20 The State of th		min
Tank materials			
Resin	Derakane 411		
Glass	20 45 40 5 HOUSE 2004		
	Inner surface - 1 layer, C-		
	vali/nexus vali with 20%	。	1
Surfacing met	silicone certide		
Chopped strand mat	3 piles ECR	。	
	Unidirectional 2402/ydf		
Continuous roving	gniven nevew		
Veil	CaVelly in the		
Cure	Co/Neo MEKP		
	Protective Gel Surface Cost with	MENSON STATES OF THE PARTY OF T	
Postcure	UV inhibiters		
Material thickness	The second secon	un de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	-
Top head	MANUFACTOR NAVIGATION		
Wall at top	0.335		in.
Wall at bottom	0.405	TECHSON CONTRACTOR	in.
Tank bottom	0.405		In.
Insulation	ACCESS AND AND NAME OF THE PERSON OF THE PER	Constraint and a second of the second	1111
nside diameter	8'-6"		ft, and in
Straight side length	16'-2#		ft, and in
ffective volume	6000		gal
//eight			-
Empty	4000		lb
Flooded	-57000		lb
Shipping	4000		lb
Selsmic moment			lbf-ft
Seismic shear	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	STATE OF SUPPLIES OF SUPPLIES	ib
Mind moment	Part in the months of the property of Aligna in the Confe		bf-ft
Mind shear		Character sales and the very second	lb
Anchor bolts		the Transport of the Control of the	
Die	THE PROPERTY OF THE PROPERTY OF STATE		In
Quantity	Later of the second second second	SPECIFICATION STATES OF STATES AND AND AND AND AND AND AND AND AND AND	
Name of supplier to perform shop testing	STATE OF STA		
service as ambiton to believed series reagile	Proposal 1	Proposal 2	·

	Proposal i Proposal i	
ank	Coagulation Mix Tanks A & B.	
Manufacturer	Customer approved (Augusta) Ershigs, An-Cor or Tankinstos	
Tank type (open vs closed top)	Open Tank	纳
Tank residence time (if applicable)		min
Tank materials		
Resin		
Giass		44
Surfacing mat	Iriner surface: /i.layer, C5. veii/nexus veil with 20% silicone carbide	ut set
Chopped strand mat	3 ples ECR	12.00
Continuous roving	Unidirectional;2402/yd ² woven roying:	Mary Mary Mary
Veil	CIVE S	\$2)
Cure	CoNap MEKP	Aria Exe
Postcure	Protective Gel Surface Coal with UV Inhibitors	
Material thickness		
Top head	NA CARL	200
Wall at top	0 286	ln.
Wali at bottom	0.348	্রীn.
Tank bottom	10.345 W. 10.345 W. 10.10 W. 1	in.
Insulation	NA STATE OF THE ST	(10) (10)
Inside diameter		ift. and in
Straight side length	**************************************	ft. and in

Effective volume	3306	· 第2、全人的主义,在主义的是"大大"的主义。	gal
Weight Empty	- Philip of the American Country of the		
Flooded	2700 31800		lb
Shipping	31800 2700		lb lb
Selsmic moment			lbf-ft
Seismic shear			ip-ir
Wind moment	The section and a section of the sec		lbf-ft
Wind shear			lb
Ancher bolts			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Dia	Cartherina (Carthrappe 1739)	THE SECTION OF STREET	in
Quantity	The state of the s	MOTE AND REPORTED BY	
Name of supplier to perform shop testing			
	Proposal 1	Proposal 2	
nk	Sulfide Mix	Tanks A & B	1
	Customer approved (Augusta)		
Manufacturer	Ershigs, An-Cor or Tankinetics		1
Tank type (open vs closed top)	Open	120,005,000,000,000,000	
Tank residence time (if applicable)	55 15 15 15 15 15 15 15 15 15 15 15 15 1		min
Tank materials			<u> </u>
Resin			ļ
Glass		Marie Carlos - Marie La Carlos (Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos C	
	inner surface: 1 layer, C- veil/nexus veil with 20%		
Surfacing mat	silicone carbide		
Chapped strand mat	3 piles ECR		1
Attables entitle (1) at	Unidirectional 2402/yd²		
Continuous roving	woven rowing]
Vell	C-Vell	armostzki kindektelik sin	-
Cure	Co/Nan MEKP		
	Protective Gel Surface Cost with UV inhibitors		
Postcure	UV inhibitors		
Material thickness			
Top head	NA:		
Wall at top	0.265		in.
VVail at bottom	0348		ln.
Tank bottom	0.345		in.
Insulation	W. C. L. C. C. C. C. C. C. C. C. C. C. C. C. C.		
inside diameter			ft. and in.
Straight side length	14-2"		ft. and in.
Effective volume	4000		gał
Weight	3000		<u> </u>
Empty Flooded	3000		lb
Shipping	~38106 3000		lb lb
Seismic moment	- COUNTY - C		lbf-ft
Selsmic Homent	OSC CONTRACTOR METAL STREET STREET		ib
Wind moment			ibf-ft
Wind shear			lb:-rc
Anchor boits	The second secon	THE RESERVE OF THE PROPERTY OF	
Dia	以表现在4分类的时间,然后就是100厘米的对		in
Quantity	Product in Children and Box		
Name of supplier to perform shop testing	Later	particular and the special state	
	Proposal 1	Proposal 2	•
ink	Fiash Mix 7	anks A & B	ĺ
	Customer approved (Augusta	D. (1916) 2017 (1916) 12 12 12 12 12 12 12 12 12 12 12 12 12	
Manufacturer	Customer approved (Augusta; Erships, An-Cor or Tankinetica	Court in Assistance	
Tank type (open vs closed top)	Орени оржината ул.		
ank residence time (if applicable)	29		min
Tank materials			
Resin			
Glass	and the second resident them are considered to the second	KIZATERIA DE LA CATADA EL CAL	
Glass	Inner surface - 1 layer, C-	EXCENSION SERVICE COMPLETE CONTRACTOR SERVICES AND CON	
	vell/nexus vell with 20%		
Surfacing mat	vell/nexus vell with 20% silicone cerbide	and the second s	
	vel(nexus vell wiff 20% siliçons carbide 3 piles ECR		
Surfacing mat Chopped strand mat	vel/naxus vell with 20% siliçons carbide 3 piles ECR Unidirectional 2402/yd ²		
Surfacing mat	vel/naxus vell with 20% siliçons carbide 3 piles ECR Unidirectional 2402/yd² woven roving		

	Protective Gel Surfece Coat with	7
Postcure	UV inhibitors	1
Material thickness		
Top head	NA NA	
Wall at top Wall at bottom	0.318	in.
Tank bottom	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	lin.
Insulation		3116
Inside diameter		ft. and in.
Straight side length		ft. and in.
Effective volume		gai
Weight Empty	3800	S III.
Flooded	380Q 25700	lib
Shipping	3600	lip
Seismic moment		lbf-ft
Seismic shear		lb
Wind moment		(bf-ft
Wind shear Anchor bolts		lib
Dia		lin .
Quantity		
Name of supplier to perform shop testing		
	Proposal 1 Proposal 2	
Tank	Coagulant Storage Tank	
Manufactura	Customer approved (Augusta) Ershigs, An-Conor Tankinetics	
Manufacturer Tank type (open vs closed top)	Ershigs; An-Coron Tankinetics Open Top	
Tank type (open vs closet top) Tank residence time (if applicable)	A STATE OF THE STA	
Tank materials		111111
Resin		
Glass		
	Inner surface of layer, C-	1
Ourted-and	val/naxus vall with 20%	į
Surfacing mat Chopped strand mat	silicone carbide 3 piles ECR	:
	Unidirectional 2402/vd	
Continuous raving	Woventroving	
Veil	wover roving C-Velt Co/Nap-MEKP	
Cure		1
Postcure	Profeotive Get Surface Coat with UV inhibitors	
Material thickness	A CAMINIDIO SANCTOR CONTRACTOR CO	
Top head	of the property of the Management of the property of the prope	
Wall at top		ln.
Wall at bottom	0.425	in.
Tank bottom	0.25	in.
Insulation Inside diameter	10	ft and in
Straight side length		ft. and in.
Effective volume		gal
Weight		
Empty	3800	lb
Flooded Shipping	75500 3600	lb lb
Selsmic moment	3000	libf-ft
Seismic shear	for the section of the contract of the property of the section of the section of	ib
Wind moment		lbf-ft
Wind shear		lb
Anchor bolts Die		in
Quantity		in
Name of supplier to perform shop testing		
	Proposal 1 Proposal 2	
Tank	Sludge Holding Tank	
Manufactura	Customer approved (Augusta)	
Manufacturer Tank type (open vs closed top)	Eratigs, An-Cor or Tankinetics Open	
Tank type (open vs closed top) Tank residence time (if applicable)	Cpen -480	min
Tank materials		11881
Resin		
Glass		

Surfacing mat	Inner surface + 1 layer, C-		
Chopped strand mat	3 plies ECR		
Continuous roving	Unidiractional 2402/yd²		
Vell	Cavell		3
Cure	Co/Nep MEKP		
Postcure	Protective Gal Surface Coat with		1
Material thickness			
Top head	NA.		
Wall at top	0.335		in.
Wall at bottom	0.545		in.
Tank bottom	0.646	A CONTRACTOR SERVICE	in.
Insulation	100 100 100 100 100 100 100 100 100 100		
Inside diameter	1900年 电电流发动系统技术的		ft. and in.
Straight side length			ft. and in.
Effective volume	9380		gal
Weight			
Empty	8900	STANDARD STANDARD STANDARDS	lb
Flooded	88100		lb
Shipping	6900		lb
Seismic moment			lbf-ft
Seismic shear		Print Tester No. 18 5355 Value 18 18	lb
Wind moment			lbf-ft
Wind shear			lb
Anchor bolts			Ť
Dia			lin
Quantity			
Name of supplier to perform shop testing			†

8.4.13 Gravity Filters

	Proposal 1	Proposal 2	
Manufacturer	Aquatech		
Materials of construction	FRP		
Backwash requirement	12-15 (Designed for 15 max)		pm/sf
Service flow rate	30		pm/sf
Tank materials	FRPS CONTROL		
Average effluent turbidity			NTU
Average effluent TS8		。	pm
Maximum rate of flow increase without effluent		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
quality degradation	The control of the co	作品的意思的可谓是这种证明	pm/hr
Backwash solids concentration	500-600		opm

6.4.14 Large Bore General Service Valves (Furnished with Equipment)

Proposal 1	Proposel 2
Constitution and the second second second	经验证证据的证据的证据的证据的
	NEEDS STATE OF STATE
PERMITTENDENCE CONTROL	
AND SERVICE SERVICES AND TOP A	
	N. Zalista (C. Aktista Karata Karata Karata Karata Karata Karata Karata Karata Karata Karata Karata Karata Kar
	的方式都不够的。 第一个数据,不是一个数据的数据的数据,

8.4.15 Small Bore General Service Valves (Furnished with Equipment)

	Proposal 1	Proposal 2
Valve identification description	5.6%,心在的人来处的特别的少数。1.6%。	
Valve manufacturer		
Type		A Section 19 Constitution (VALTHEST CONSTITUTION
Size		
Wetted materials		
Valve identification description		
Valve manufacturer		
Турв		
Size		
Wetted materials		

6.4.16 Control Valves (Furnished with Equipment)

	Proposal 1	Proposal 2	
Valve identification description			
Valve manufacturer	Fisher		

Wastewater Treatment System

Туре	Ceramic V-Ball
Size	11, 37, 42, 65
Netted materials	
Valve Identification description	
/aive manufacturer	
Гуре	
Size	
Vetted materials	

8.0 ALTERNATES AND PRICING

The Vendor is requested to address alternate proposals by including either of the following statements: "Having compiled with the bidding requirements of your Specifications and attachments, we request due consideration to the attached alternate proposals, complete with prices and descriptive date for comparison to the base proposal* or Having compiled with the bidding requirements of your Specifications and attachments, we do not offer an atternate proposal.

The Bidder's base bid shall meet the equipment requirements and match the treatment process as dictated by the attached flow diagrams and specifications contained herein. Alternate treatment methods or proprietary technologies not covered in these specifications should not be included in the Bidder's base proposal. In addition to the base bid, the Bidder may propose alternate bids which include alternate treatment technologies and/or changes to the specified process. The alternate bids must meet the effluent performance guarantees and specifically indicate where the Bidder has deviated from the specification requirements. Justification for these deviations shall also be provided, whether technical or economical in nature. Evaporative treatment methods will not be acceptable to the Purchaser.

9.0 EXCEPTIONS

9.1 Exceptions shall be noted in accordance with Paragraphs 14.3 of the General Specifications.

We have reviewed your Specifications and all related attachments. Unless specific exceptions are listed below (or attached to our proposals and referenced below), it is understood that all of the provisions contained therein are acceptable to us:					
	without e	xception			
	with exce	eptions as outlined b	eľow:		
AlC Old Jenus Cloriff	ication Exception Do				
	ocuments presented				
美国的自己的基础	"是这名数据,但在最后是				
1200 1100 1100 1100 1100 1100 1100 1100	Personal Control			医结构 医多数 医二种 医	
(47) - 12 (1) 1					

10.0 SUBCONTRACTORS

During the course of accomplishing work required by this inquiry, we will subcontract certain portions of the work to the firms listed below:

Name and Address of Subcontractor	Work to be Performed
身持行为。2018年代被称为2018年代起,企业是201	
	2. 1997年 (1997年) [1] [1] [1] [1] [1] [1] [1] [1] [1] [1]

We understand that any changes in the above designated subcontractors after award of the contract must be pre-approved in writing by the Purchaser.

11.0 SIGNATURE

The undersigned hereby attests and affirms that: the inquiry documents have been read in detail by officers, employees, agents, or representatives of the company named below; that the company named below is fully qualified and able to perform in accordance with the terms and conditions of these inquiry documents; that he/she is an officer or employee of the company named below; that he/she is authorized to submit this Proposal, and, should Purchaser accept this Proposal, or any part or portion thereof, bind the company to the terms of these inquiry documents.

	SIGNATURE:			STEEL AND THE STATE OF THE STAT		
	Title:	中学生的特色			5098912228X1953	with its case
12.0	NAME OF COM	IPANY:	Aquatech international Corpo	aration :	Hall Walley	
	Telephone Number	724-748-5300				15年/6月1世 第 6
	Fax Number	724-748-5359				
13.0	DATE: 8/17/2007					

Equipment only wastewater treatment system proposal rev 0 2/15/2007

INQUIRY No.

PROPOSAL

FORM Attachment I

Bidder's name and address

Infileo Degrement

EQUIPMENT ONLY WASTEWATER TREATMENT SYSTEM

FOR SOUTHERN COMPANY

PLANT CRIST SCRUBBER PROJECT of GULF POWER COMPANY

Southern Company 42 Inverness Center Parkway Bin # B414 Birmingham, AL 35242

1.0 SCOPE

In accordance with your inquiry No. inviting proposals for Wastewater Treatment system for the referenced generating plant and subject to all conditions and requirements of your Specification, all related attachments and accompanying documents in connection therewith, we propose to design, fabricate, deliver, and commission the equipment for the prices quoted herein. Pricing does not include state sales/use tax.

"Option" is understood to be Purchaser's option.

2.0 PRICING

16

Note: All pricing F.O.B. plant eite: State sales/use tax le excluded

2.1 Proposei 1 - River water as makeup, discharge to river (Alternate Design)

2.2.9 Price for filter cress cloth wash system (Option)

For scope of supply as described in the Specifications and Vendor Proposal 2.1.1 Price for providing equipment 2.1.2 Price for start up assistance 3 2.1.3 Price per day for additional field technical support 2.1.4 Maximum freight to plant site (All freight to be included here) 2.1.5 Price for erection of clariflers (Option) 2.1.6 Price for low local shear agitators (Option) (where beneficial for process chemistry) 7 2.1.7 Price for acid/caustic neutralization equipment (Option) 2.2 Proposal 21 - Recialm water as makeup, discharge to deep wells (BASE Design) For scope of supply as described in the Specifications and Vendor Proposal 8 2.2.1 Price for providing equipment 2.2.2 Price for start up assistance /p 2.2.3 Price per day for additional field technical support 11 2.2.4 Maximum freight to plant site (All freight to be included here) 12 2.2.5 Price for erection of clariflers (Option) 13 2.2.6 Price for low local shear agitators (Option) (where beneficial for process chemistry) 14 2.2.7 Price for acid/caustic neutralization equipment (Option) 2.2.8 Price for Itama which increase filter press automation, minimize maintenance, or alert DCS operators there is trouble with the presses (Option)

Wastewater Treatment System

3.0		ESCALATION	
;	3.1	Material prices quoted are:	100 % firm
			N/A % escalated
;	3.2	For escalated prices, the following shall	apply:
	3.2.1	Indices to be used (include percentages	a applicable to materials, labor, etc.)
		N/A	
	3.2.2	Starting date of escalation	The state of the s
	3.2.3	Base Index Value(s) and base month	The state of N/A
	3.2.4	Ending date of escalation	N/A
	3.2.5	Limits of escalation	NA NA
	3.2.6	Method of calculating escalation	N/A
4.0		ACCEPTANCE	
		Prices quoted shall be valid for ninety (90) days after proposal date.
5.0		QUALITY ASSURANCE	
			cumentation required by Paragraph 8.0 of the General Specification, we will ntation which is generated as a result of our Quality Assurance Program.
		IDI Standard QA/QC Documentation Se provide upon request a copy of IDI's QA	ale be provided, as well, as those required by Southern Company's QA/QC Program. IDI can A/QC Manual

6.0 DESCRIPTIVE DATA AND ENGINEERING INFORMATION

The following descriptive information and design data are furnished in connection with the equipment and materials offered with this Proposal.

6.1 Utility Consumption Data - Plant Crist

Proposal 1

Instrument air (also use for service air)	peak schn @ psi	average scim 👽 🕬
Potable water	Olpeak gpm Ø psi	Oleverage gpm Ø psi
Service water	peak gpm Ø psl	average gpm @ psi
Electricity	peak kW	average kW/dey

Proposal 2

instrument sir (also use for service sir)	peak selm & pei	average coim @ per
Potable water	noak opm 6 psi	overage gom & per
Service water	poak opm Ø pu	avorage gpm & pc.
Electricity	peak kM	average kW/day

6.2 Chemical Consumption Dats - Plant Criet

8.2.1 Chemical Description and Estimated Cost

ノスラヤグし

Proposal 1		
Coagulant (as 40% ferric chloride)		
Polymer		
Dewatering Polymer (if needed)		
Polymer Dewatering Polymer (if needed) Hydrochloric Acid (37%)		
TMT Lime (hydrated)		
Lime (hydrated)		

6.2.2 Chemical Dosing Rate (Estimated)

Proposal 1

Coagulant (as 40% ferric chloride)	75	mg/L		lb/hr	1.35	gal/hr
Polymer (Neat Solution 30 % Active)	10	mg/L		lb/hr	0.25	gai/hr
Dewatering Polymer (if needed)	NA	mg/L	N/A	tb/hr	NA	gal/hr
Hydrochioric Acid (37%)	20	mg/L		lb/hr	0.5	gai/hr
TMT	4	mg/L		lb/hr	0.26	gai/hr
Lime (hydrated)	480	mg/L	47.95	lb/hr		gei/hr
		mg/L		ib/hr		gai/hr
		mg/L		lb/hr		gai/hr
		mg/L		fb/hr		gal/hr

4.2.3 Chemical Description and Satimated Cost

Proposal 2

Conquient (se 40% ferris chieride)	
Polymor	
Dewatering Polymer (If needed)	
Sulfurio Aold (93%)	
Sulfide	
Lime (hydrated)	
Othere	

8.2.4 Chemical Dosing Rate

Proposal-2

Coagulant (as 40% ferris chloride)	mg/L	ladur	gol/hy
2 olymer	mg/la	lbular	gal/h+
lovatoring Polymer (if needed)	mg/l _s	fs/hr	gal/hr
iulturio Aeid (93%)	rng/L	la/n#	gains
ulfide	mg/l-	Ja/hr	gai/hr
ime (hydrated)	mg/l.	#PAP#	gaithr
Othere			
	mgA _z	lb/nr	gai/hr
	mg/l _a	lla/hr	gei/hr
	mg/L	lb/sr	gai/hr

6.3 Wastewater Treatment System Process Description - Plant Crist

See Proposals	

6.4 Equipment Fill in Data

6.4.1 Lime Storage & Feed Equipment

	Proposal 1	Proposal 2	
System Manufacturer			
Storage Silo			
Quantity	100		1
Effective storage volume	2,666		ft ³
Inside diameter	12'-0"		ft, and in.
Straight side length	40'-0"		ft. and in.
Cone angle	60		degrees
Cone height	6" (Approx)		ft. and in.
Material of construction	Carbon Steel		
Interior coating manufacturer/system	None		
Exterior coating manufacturer/system	Primer 2.0 Mils, Finish 1.5 Mils Tv	o Part Acrylic Polyurethane	ł
Operating weight (Estimated)	44, When Completely Filled		tons
Storage Silo Fill Line			
Material of construction	Carbon Steel		
Fill connection type / manufacturer	4*, Quick Connect, Kamlock		T
Compression seal coupling manufacturer	N/A		
Bin Activator			
Manufacturer	Kinergy	Note that the second of the se	
Materials of construction	Carbon Steel		
Model No.	Contract Submittal		
Inlet flange size	5 ft		

Outlet flange size	12 inches	<u></u>	
Utility requirements, compressed air or electric	Electric		hp
Lime Feeder			
Manufacturer	Enpro		
Materials of construction	304 Stainless Steel		
Model No.	Series 43		
Capacity Range, _ to _ Power requirements	360 0.5 0 90V DC Drive		lbs/hr
Storage Silo Pulse Air Bag	Shaker Type		hp
Quantity			
Manufacturer	Enpro		
Materials of construction	Carbon Steel		L
Model No.	Series 1704		
Air filtration capacity Filter surface area	1,500		ft ³ /min
Utility requirements, compressed air capacity	300 N/A - Electric		scfm
Storage Silo Exhaust Fan	TVA - EROUR		Ischii
Quantity	Provide the second control of		
Manufacturer	Dayton		
Materials of construction	Carbon Steel		
Model No.	Contract Submittal	<u> </u>	
Air capacity	Contract Submittal 0.05		ft ⁸ /min
Utility requirements, electric Lime Silo Level Switches	0.05		hp
Quantity	N/A		
Manufacturer	N/A		
Model No.	N/A		
Туре	N/A		
Lime Silo Continuous Level Instrumentation			ļ
Quantity Manufacturer	1 ENH		ļ
Model No.	Contract Submittal		
Type	Gulded Wave Radar		
Slurry Tank Continuous Level Instrumentation			
Quantity	10.74		
Manufacturer	ENH		
Model No. Type	Contract Submittal Guided Wave Radar		
Siurry Tank	Guides Iyava Hadai		
Quantity	man man merki ligir et ili gere.	PRODUCTION OF THE PROPERTY OF	
Capacity	750		gai
Operating weight (Estimated)	7,500		lbs
Shell material of construction Lining material of construction	316 Stainless Steel 316 Stainless Steel		
Mixer manufacturer	3 TO GIZINIOSS GLOON		Ļ
Model No.	VVInderf	and the contract of the contra	E .
I MUGGI NO.	Wingert Contract Submittal		
Slurry feed piping material			
Slurry feed piping material Equipment Area	Contract Submittal Schedule 80 Galivanized		
Slurry feed piping material Equipment Area Insulation thickness	Contract Submittal Schedule 80 Galivanized None		in.
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value	Contract Submittal Schedule 80 Galivanized None NA		in.
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights	Contract Submittal Schedule 80 Galivanized None N/A 2		in.
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each	Contract Submittal Schedule 80 Galivanized None NA 2 Fluorescent 60 Watts		in.
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system	Contract Submittal Schedule 80 Galivanized: None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To		
Slurry feed piping material Equipment Area Insulation thickness Insulation T-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size	Contract Submittel Schedule 80 Galivanized: None N/A: 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To		kw
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H	Contract Submittal Schedule 80 Galivanized: None N/A: 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8"		kW ft. and in.
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watta Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal		kW ft. and in. ft³/min
Slurry feed piping material Equipment Area Insulation thickness Insulation H-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements	Contract Submittal Schedule 80 Galivanized: None N/A: 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8"		kW ft. and in.
Slurry feed piping material Equipment Area Insulation thickness Insulation H-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mills, Finish 1.5 Mills To 10 6 'x 6'-8" Contract Submittal 0.05		kW ft. and in.
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer	Contract Submittal Schedule 80 Galivanized None NA 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey	vo Part Acrylic Polyurethane	kW ft. and in.
Slurry feed piping material Equipment Area Insulation thickness Insulation thickness Insulation H-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6 x 6 8" Contract Submittal 0.05 50 gpm © 50 psig Wilfey Contract Submittal	vo Part Acrylic Polyurethane	kW ft. and in.
Slurry feed piping material Equipment Area Insulation thickness Insulation H-value Quantity of lights Type of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm \$60 psig Wilfey Contract Submittal Centrifugal	vo Part Acrylic Polyurethane	kW ft. and in. ft³/min
Slurry feed piping material Equipment Area Insulation thickness Insulation thickness Insulation H-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mills, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centrifugal Flanged	vo Part Acrylic Polyurethane	kW ft. and in. ft³/min
Slurry feed piping material Equipment Area Insulation thickness Insulation H-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mills, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centrifugal Flanged	vo Part Acrylic Polyurethane	kW ft. and in.
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centrifugal Flanged 2.5" 2"	vo Part Acrylic Polyurethane	kW ft. and in. ft ³ /min hp
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge Flange Ciass	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm \$2 50 psig Wilfey Contract Submittal Centrifugal Flanged: 2.5"	vo Part Acrylic Polyurethane	kW ft. and in. ft ³ /min hp
Slurry feed piping material Equipment Area Insulation thickness Insulation H-value Quantity of lights Type of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge Flange Class Suction	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm © 50 psig Wilfey Contract Submittal Centrifugal Flanged 2.5" 2" ANSI:150 Lbs	vo Part Acrylic Polyurethane	kW ft. and in. ft ³ /min hp
Slurry feed piping material Equipment Area Insulation thickness Insulation H-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge Flange Class Suction Discharge	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centiffugal Flanged 2.5" 2" ANSI:150 Lbs ANSI:150 Lbs	vo Part Acrylic Polyurethane	kW ft. and in. ft ³ /min hp
Slurry feed piping material Equipment Area Insulation thickness Insulation H-value Quantity of lights Type of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge Flange Class Suction	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mills, Finish: 1.5 Mills To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centrifugal Flanged: 2.5" 2" ANSI:150 Lbs ANSI:150 Lbs 1,000 (Approx) 900 (Approx)	vo Part Acrylic Polyurethane	kW ft. and in. ft ³ /min hp
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge Flange Class Suction Discharge Net weight Pump (less motor) Baseplate	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish: 1.5 Mils Ti 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centrifugal Flanged: 2.5" 2" ANSI: 150 Lbs ANSI: 150 Lbs 1,000 (Approx)	vo Part Acrylic Polyurethane	kW ft. and in. ft³/min hp nom. inches
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge Flange Class Suction Discharge Net weight Pump (tess motor) Baseplate Performance Data, each pump	Contract Submittal Schedule 80 Galivanized None NVA 2 Fluorescent 60 Watts Primer 2.0 Mils, Finish 1.5 Mils To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centrifugal Flanged 2.5" 2" ANSI 150 Lbs ANSI 150 Lbs 1,000 (Approx) 900 (Approx)	vo Part Acrylic Polyurethane	kW ft, and in. ft ³ /min hp norn, inches norn, inches
Slurry feed piping material Equipment Area Insulation thickness Insulation R-value Quantity of lights Type of lights Light wattage, each Interior coating manufacturer/system Heater size Access door opening size, W x H Exhaust fan air capacity Power requirements Lime Slurry Feed Pump(s) General Data Pump manufacturer Model Type Connections Size Suction Discharge Flange Class Suction Discharge Net weight Pump (fess motor) Baseplate	Contract Submittal Schedule 80 Galivanized None N/A 2 Fluorescent 60 Watts Primer 2.0 Mills, Finish: 1.5 Mills To 10 6' x 6'-8" Contract Submittal 0.05 50 gpm @ 50 psig Wilfey Contract Submittal Centrifugal Flanged: 2.5" 2" ANSI:150 Lbs ANSI:150 Lbs 1,000 (Approx) 900 (Approx)	vo Part Acrylic Polyurethane	kW ft. and in. ft³/min hp nom. inches nom, inches

Recommended minimum continuous flow	1 50		gpm
Seal water flow/pressure required	50		gpm and pa
Guaranteed performance, each pump	Contract Submittal		
Capacity at design conditions	50		gpm
Total head at design conditions	115		ft H ₂ O
pump shaft center line	Contract Submittal		ft H ₂ O
Pump efficiency at design conditions	80 (Approx)		%
Maximum shutoff head	Contract Submittal		ft H ₂ O
Power requirements	Contract Submittal		1
At design conditions	Contract Submittal		hp
At shutoff	Contract Submittal		hp
Maximum	Contract Submittal		hp
Pump Construction	Cast Iron		
Impeller diameters	Contract Submittal		<u> </u>
Design	Contract Submittal		in.
Maximum available	Contract Submittal		in.
Minimum available	Contract Submittal Contract Submittal		in.
Materials Casing	Contract Submittai		
Shaft	Contract Submittal		
(mpeller	Contract Submittal		
Shaft sleeves	Contract Submitte		
Impeller wearing rings	Contract Submittal		
Casing wearing rings	Contract Submittal		<u> </u>
Type of bearings	Contract Submittal		
Radial	Contract Submittel		<u> </u>
Thrust	Contract Submittal		
Mechanical shaft seal	Contract Submittal Contract Submittal		
Manufacturer Model No.	Contract Submittal		
Shaft diameter	Contract Submittal		
At bearing location(s)	Contract Submittal		in.
At seal packing location(s)	Contract Submittal		in.
Sleeve, outer diameter	Contract Submittal		in.
Coupling	Contract Submittal		
Manufacturer	Contract Submittal		
Model No.	Contract Submittai		<u> </u>
Rated power/service factor	5 N/A		hp
List of special tools which will be furnished Field assembly work required	Minimum		
Shipping weight	1,000 Approx		bs
Mixer	110-00 7 150-00-00		1
Manufacturer	Wingert		
Materials of construction	316 Stainless Steel		
Connection Type (baseplate or flanged)	Flanged		
Model No.	Contract Submittat		
Local Control Panels			ļ.,
Panel size (L x W x H)	Contract Submittal		ft and in
Panel approximate weight Manufacturer	500 Enoro		lbs
Manufacturer	N/A		1
Progammable Logic Control Systems	16/4:	<u> </u>	
Manufacturer	Allen-Bradley		╆───
Model No.	ControlLogix		<u> </u>
Low Voltage Induction Motors			
Motor manufacturer	Contract Submittal		
Model number	Contract Submittal		
Driven Equipment	See P & ID		
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		L
Driven equipment maximum brake horsepower Motor nameplate	Contract Submittal Contract Submittal		lhp
Service factor (NEMA/IEEE motors only)	Contract Submittal		hp
Motor bearing type	Contract Submittal		
	Contract Submittal		· · · · · · · · · · · · · · · · · · ·
Motor eniciency at hamediate. No. bercent			
Motor efficiency at nameplate, hp, percent Bearing lubrication system	Contract Submittal	all education has been presented as	

6.4.2 Solids Contact Equipment

	Proposal 1	Proposal 2	
Clarifler	Wastewater Cin	rifier A & B	
Quantity	2]
Materials of construction	Carbon Steel		
Minimum system capacity	0		gpm
Maximum system capacity	120		gpm
Average effluent turbidity	10:		NTU
Average effluent suspended solids	20		mg/L

Maximum rate of flow increase without effluent	10		gpm/hr
Influent water temperature rise limitation	3		°F/hr
Underflow solids concentration	5	Estimated	% weight
Diameter	14		ft
Height	16%		ft
Reaction well dimensions	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Tajare valjejastici je se godi	ft
Recirculation rate (as % of inlet flow)	5		
icraper Drive Unit			
Manufacturer	SPS		1
Materials of construction	Carbon Steel		
Model number	DDSL-903004Z		T i
Type	Dual Drive with Lift		
Motor Data	0.5	지배고요 한 경기 모든 일반 화소를 보고 있다.	
Manufacturer	NORD		
Enclosure			
Horsepower at design conditions	[1] 中国国际第1 0.5 维数据自由的同时	도전되는 하는 철하는 어떻게 된다. 하는다. 나는	hp
Service factor	1.15 (Drive 7)	시작들이 보면 없는 경험 중요를 다니지 않	
Voltage/Phase/RPM	480/3/0.5		
Variable frequency drive	TO THE PERMANENT OF THE		
Manufacturer	 All et verkale has et POPT division à la et 		
Model number			
Туре			
Motor Data			
Manufacturer			J
Enclosure			
Horsepower at design conditions			hp
Service factor			
Voltage/Phase/RPM			
Variable frequency drive			
Voltage/Phase/RPM			
Variable frequency drive			
Guaranteed Clarifler Effluent Quality			
Turbidity	10 1 4 10 14 10 10 14 14 14 14 14 14 14 14 14 14 14 14 14		NTU
Suspended solids	25		mg/L

6.4.3 Agitator

	Proposal 1	Proposal 2	
Agitator	Desatural	tion Tank Agitator A & B	
Manufacturer	Lightin or Philadephia		
Connection Type (baseplate or flanged)	Flanged		
Model No.	73Q5		
Weight	(Approx)	医乳腺性软件 医乳腺管 化氯化 医阴道性 医原	lb
impeller diameter	42.2.1	n en fra i particularen 1930a bil.	in.
Impeller(s) height from floor	75	तु भगतीको एक्स्या प्राप्त सम्बन्धति हा र कार्य	in.
Minimum submergence required from tank	A 1.411 Table 1. 175 Sp. 49-24		ft. and in.
Shaft length	15/4/4		ft. and in.
Blade angle	Contract Submittal		degrees
Number of biades			86
Number of baffies required in basin	2	발맞되자는 하고 화학 사용의 한 학생 모양이 되었다.	ST .
Degrees between baffles			
Baffle dimensions, L x W x H	45		ft, and in.
Impeller and shaft material	Carbon Steel		
Impeller and shaft covering material	Rubber Lined		
Impeller and shaft covering thickness	1/4**		in.
Tank Bridge Loadings			
Bending moment	13,000 (Approx)		lbf-ft
Torque	5,600 (Approx)		lbf-ft
Axial Load	Contract Submittal		lbf
Gear reducer			7
Manufacturer	Lightin or Philadephia		\$1.
Model No.	73 Lightin		
Reduction ratio (;)	Contract Submittal		-
Number of reductions	Contract Submittal	The same of the second and and the	
Service factor		The Billion of the Principle of the Control	,
Performance data			
Operating speed	68,3		rpm
Critical shaft speed	Contract Submittal		rpm
Tip speed	Contract Submittal		ft/s
Low Voltage Induction Motor			7
Motor manufacturer	Teco		1
Model number	Max-E2 (Type AEHH)		1
Driven Equipment	Mixer		1
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		.
Driven equipment maximum brake			
horsepower	4.5 (Estimated)		hp
Motor nameplate, hp (kW)	5		1.10

Service factor (NEMA/IEEE motors only)	1.15		1
Motor bearing type	De-gassed Regreasable Ball Bearly	0	
Motor efficiency at nameplate	89.5		hp, %
Bearing lubrication system	External Grease		
W-2-1			
Space heater rating (watts / voltage / phase)	Contract Submittal		
	Proposal 1	Proposal 2	
Agitator		Mix Tank Agitator A & B	
Manufacturer	Lightin or Philadephia		1
Connection Type (baseplate or flanged)	Flanged		
Model No.	7302		
Weight	1,500 (Approx)		lb
Impeller diameter	38		in.
Impeller(s) height from floor	75		in.
Minimum submergence required from tank	75		ft. and in.
Shaft length	15 -15		ft. and in.
Blade angle	Contract Submittal		degrees
Number of blades	2		
Number of baffles required in basin	4		
Degrees between baffles	45	en en la jegen en like en trakkt kant ge	
Baffle dimensions, L x W x H	10" W x 14'H		ft. and in.
Impeller and shaft material	Carbon Steel		
Impeller and shaft covering material	Rubber Lined		
Impeller and shaft covering thickness	1/4"		in.
Tank Bridge Loadings			
Bending moment	13,000 (Approx)		lbf-ft
Torque	6,500 (Approx)		lbf-ft
Axial Load			lbf
Gear reducer Manufacturer	Lightin or Philadephia		
			<u> </u>
Model No. Reduction ratio (;)	73 Lightin		ļ
Number of reductions	Contract Submittal Contract Submittal		
Service factor	Contract Submittal		
Performance data	Contract Southintal		
Operating speed	68.3	And the second second second	
Critical shaft speed	Contract Submittal		rpm
Tip speed	Contract Submittal		rpm ft/s
Low Voltage Induction Motor	Some act Coolings		108
Motor manufacturer	Teco		<u> </u>
Model number	Max-E2 (Type AEHH)		
Driven Equipment	Mixer		
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake			
horsepower	1.8 (Est)		hp
Motor nameplate, hp (kW)	2		17
Service factor (NEMA/IEEE motors only)	1.15		
Motor bearing type	De-gassed Regreasable Ball Bearin		
Motor efficiency at nameplate	89		hp, %
Bearing lubrication system	External Grease		
Space heater rating (watts / voltage / phase)	Contract Submittal	하고 하 되지말 빨리 하고 있는 (하고) 말.	ŀ
	Proposal 1	Proposal-2	
Agitator	Sulfide Mix	K Tank Agitator A & B	
Manufacturer	Lightin or Phliadephia		
Connection Type (baseplate or flanged)	Flanged		
Model No.	73Q2		
Weight	1,500 (Approx)		lb
Impeller diameter	38		in.
Impeller(s) height from floor	75		in.
Minimum submergence required from tank	75		ft. and in.
Shaft length Blade angle	15-17		ft. and in.
Number of blades	Contract Submittal		degrees
Number of baffles required in basin			
Degrees between baffles	45		
Baifle dimensions, L x W x H	10" W x 14'H		ft. and in.
Impeller and shaft material	Carpon Steel		Je Cally III.
Impeller and shaft covering material	Rubber Lined		
Impelier and shaft covering thickness	1/4*	,	in.
Tank Bridge Loadings	<u> </u>		""-
Bending moment	13,000 (Approx)		lbf-ft
Torque	6,500 (Approx)		lbf-ft
Axiai Load			lbf
Gear reducer			
Manufacturer	Lightin or Phliadephia		

Model No.	73 Lightin		
Reduction ratio (:)	Contract Submittal	<u> </u>	
Number of reductions	Contract Submittal	<u> </u>	
Service factor	20,10,20, 24,51,(10,0)		
Performance data	<u> </u>		
Periormance data			<u> </u>
Operating speed	68.3		īpm —
Critical shaft speed	Contract Submittal		rpm
Tip speed	Contract Submittal		ft/s
Low Voltage Induction Motor		!! <u>; </u>	-
Motor manufacturer	Tone		
	Teco		<u> </u>
Model number	Max-E2 (Type AEHH)		<u> </u>
Driven Equipment	Mixer	T_{m}^{*}	1
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		1
Driven equipment maximum brake		. And the state of	1
· · ·	A A-FE-MAN		[.
horsepower	1.8 (Est)		hp
Motor nameplate, hp (kW)	2		
Service factor (NEMA/IEEE motors only)	1.15		Ϊ
	De-gassed Regreasable Ball Bear	ina	1
Motor efficiency at nameplate	89	174	h. 0/
			hp, %
Bearing lubrication system	External Grease		
Space heater rating (watts / voltage / phase)	Contract Submittal		ŀ
	Proposal 1	Proposal 2	
Agitator		ix Tank Agitator A & B	
Manufacturer	Lightin or Philadephia		
Connection Type (baseplate or flanged)	Flanged	Agrantin and the second of the second	
Model No.	73Q2		
Weight	1,500 (Approx)	10 A A A A A A A A A A A A A A A A A A A	lb
Impeller diameter	38		
			in.
Impelier(s) height from floor	75		in.
Minimum submergence required from tank	75 (3.3)		ft. and in.
Shaft length	15-1		ft. and in.
Biade angle	Contract Submittal		degrees
Number of blades	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		Juogroea
			ļ <u>.</u>
Number of baffles required in basin	4	The second secon	l
Degrees between baffles	45		
Baffle dimensions, L x W x H	10" W x 14'H		ft. and in.
Impeller and shaft material	Carbon Steel		
Impeller and shaft covering material	Rubber Lined		
Impeller and shaft covering thickness	1/4		
Trubblet and shall covering inickness	UA .		in.
Tank Bridge Loadings			<u> </u>
Bending moment	13,000 (Approx)		lbf-ft
Torque	6,500 (Approx)		lbf-ft
Axiai Load	Contract Submittal		lbf
Gear reducer			1001
Manufacturer	Liebtie er Obliedenble		
	Lightin or Philadephia	Market and the Market and the Carlo	
Model No.	73 Lightin		
Reduction ratio (:)	Contract Submittel		
Number of reductions	Contract Submittal		
Service factor	Contract Submittal		
Performance data		1 - in - in - in - in - in - in - in - i	
	00.0	1	ļ
Operating speed	68.3	The state of the s	rpm
Critical shaft speed	Contract Submitted		(PM)
Tip speed	Contract Submittal		ft/e
Low Voltage Induction Motor			
Motor manufacturer	Teco		<u> </u>
Model number			
	Max-E2 (Type AEHH)		
Driven Equipment	Mixer		
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake			
horsepower	1.8 (Est)		-
Motor nameplate, hp (kW)	I.O (ESU)		lhp
Conto factor (NELLA NEEL			
Service factor (NEMA/IEEE motors only)	1.15×2.14 / 1.15×2		
	De-gassed Regreasable Ball Bearl	ng	
Motor efficiency at nameplate	89		hp, %
Bearing lubrication system	External Grease		
Cases heater rating treats (0		
Space heater rating (watts / voltage / phase)	Contract Submittal	<u> Paper e esta es ex</u> ista de la lite	<u> </u>
	Proposal 1	Proposal 3	<u>L</u>
Agitator	Proposal 1		
Agitator	Proposal 1 Wastewate	Proposal 2 r Clariffer Turbine A & B	
Agitator Manufacturer	Proposal 1 Wastewate SPS		
Agitator Manufacturer Connection Type (baseplate or flanged)	Proposal 1 Wastewate SPS Flanged		
Agitator Manufacturer Connection Type (baseplate or flanged) Model No.	Proposal 1 Wastewate SPS Flanged DDSL-903004Z	r Clarifier Turbine A & B	
Agitator Manufacturer Connection Type (baseplate or flanged) Model No. Weight	Proposal 1 Wastewate SPS Flanged DDSL-903004Z 2,800	r Clarifier Turbine A & B	lb
Agitator Manufacturer Connection Type (baseplate or flanged) Model No.	Proposal 1 Wastewate SPS Flanged DDSL-903004Z	r Clarifier Turbine A & B	lb

Minimum submergence required from tank	Contract Submittal		ft. and in.
Shaft length	Contract Submittal		ft. and in.
Blade angle	18 (Curved Blade)		degrees
Number of blades	5		
Number of baffles required in basin	4		
Degrees between baffles	90		}
Baffle dimensions, L x W x H	6' W x 4'H		ft. and in.
Impeller and shaft material	Carbon Steel]
Impeller and shaft covering material	Rubber Lined		
Impeller and shaft covering thickness	1/4"		in.
Tank Bridge Loadings			
Bending moment	Contract Submittel		lbf-ft
Torque	Contract Submittal		lbf-ft
Axial Load	Contract Submittat		lbf
Gear reducer			
Manufacturer	NORD (Helical)		
Model No.			
Reduction ratio (:)	4.7 x 90 x 55		
Number of reductions	3.4		
Service factor	2.5		
Performance data			
Operating speed	16		rpm
Critical shaft speed	40		rpm
Tip speed	< 5		ft/s
Low Voltage Induction Motor			
Motor manufacturer	NORD		
Model number			
Driven Equipment	Turbine Drive		
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		
Driven equipment maximum brake			
horsepower	2.5		hp
Motor nameplate, hp (kW)	3		1
Service factor (NEMA/IEEE motors only)	1.15		
Motor bearing type	Ball		
Motor efficiency at nameplate			hp, %
Bearing lubrication system	Sealed Greased for Life		
Space heater rating (watts / voltage / phase)	N/A		
	Proposal 1	Proposal 2	

Opens Hatter Island (Metal Francisco ; prisses)	Proposal 1	Proposal 2	1
Agitator	Sludge	Holding Tank Agitator	
Manufacturer	Lightin or Philadephia	t král měvetky ymatelátny literation	
Connection Type (baseplate or flanged)	Flanged		
Model No.	73Q5		
Weight	(Approx)		lb
Impelier diameter	42		in,
Impeller(s) height from floor	75		in.
Minimum submergence required from tank	75		ft. and in.
Shaft length	15'-1'		ft. and in.
Blade angle	Contract Submittal		degrees
Number of blades	2		
Number of baffies required in basin	2		
Degrees between baffles	4 1-6.41 .		
Baffle dimensions, L x W x H	45		ft. and in.
Impeller and shaft material	Carbon Steel		
Impeller and shaft covering material	Rubber Lined		7
impeller and shaft covering thickness	1/4"		in.
Tank Bridge Loadings			
Bending moment	13,000 (Approx)		lbf-ft
Torque	5,600 (Approx):		lbf-ft
Axial Load	Contract Submittal		lbf
Gear reducer			
Manufacturer	Lightin or Philadephia		
Model No.	73 Lightin		
Reduction ratio (:)	Contract Submittal		
Number of reductions	Contract Submittal		
Service factor	Contract Submittal	The state of the s	
Performance data	1		.1.
Operating speed	68.3		rpm
Critical shaft speed	Contract Submittal		rpm
Tip speed	Contract Submittal		ft/s
Low Voltage Induction Motor			
Motor manufacturer	Teco		
Model number	Mex-E2 (Type AEHH)		
Driven Equipment	Mixer		1
Design standards (e.g., NEMA/IEEE, IEC)	NEMA		

Oriven equipment maximum brake						
horsepower	4.5 (Estimated)					hp
Motor nameplate, hp (kW)	5					
Service factor (NEMA/IEEE motors only)	1.15					
Motor bearing type	De-gassed Regreasable Ball Bearli	ng				
Motor efficiency at nameplate	89.5				1. 1	hp, %
Bearing lubrication system	External Grease	``				
			T : .	4.75		
Space heater rating (watts / voltage / phase)	Contract Submittal			1000		

Space heater rating (watts / voltage / phase)	Contract Submittal	1	<u> </u>
	Proposal 1	Proposal 2	
Agitator - N/A	Ciarifier Blowdow	n Sump Agitator - Not Required	
Manufacturer			
Connection Type (baseplate or flanged)			
Model No.			l
Weight			lb
Impeller diameter			in.
Impeller(s) height from floor			in.
Minimum submergence required from tank			ft. and in.
Shaft length			ft. and in.
Blade angle			degrees
Number of blades			
Number of baffles required in basin			
Degrees between baffles		7	
Baffle dimensions, L x W x H			ft. and in.
Impeller and shaft material			
Impeller and shaft covering material			
Impeller and shaft covering thickness			in.
Tank Bridge Loadings			
Bending moment			lbf-ft
Torque			lbf-ft
Axial Load		Little of Horsel Association (Control of the Contro	lbf
Gear reducer			
Manufacturer	X		l
Model No.			
Reduction ratio (;)			
Number of reductions			<u>. </u>
Service factor			
Performance data			
Operating speed			rpm
Critical shaft speed	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		rpm
Tip speed			ft/a
Low Voltage Induction Motor			
Motor manufacturer		New years of the first transfer of the first transfer of	<u>L</u>
Model number			<u> </u>
Driven Equipment			
Design standards (e∕g., NEMA/IEEE, IEC)			:
Driven equipment maximum brake	Table 1		
horsepower			hp
Motor nameolate, hp (kW)			
Service factor (NEMA/IEEE motors only)			
Motor bearing type			
Motor efficiency at nameplate			hp, %
Pearing lubrication system			
/			
Space heater rating (watts / voltage / phase)			

6.4.4 Inlet Flow Instrumentation

	Proposal 1	Proposal-2
Raw water flow transmitter		
Manufacturer	ABB	
Model number	Magmaster MFE-4-ER-14031.1	
Primary elements type	Hastelloy	
Primary elements manufacturer	ABB	
Differential pressure loss at design flow rate	< 2 pisg	psi
Raw water flow control valve		
Manufacturer	Xomox	· (4) 医生态管理学 (1) 特别的 (#) (4)
Model number	Fig 008	
Size	2"	
Differential pressure loss at design flow rate	< 2 psig	psi

6.4.5 Liquid Chemical Feed Equipment

	Proposal 1	⊬ropasal-	3
Chemical Feed System		Coagulant	
Pump Information			
Quantity	3		
Manufacturer	Pulsafeeder		

Type	Hydraulic Actuated Diaphagm Puisa Series 680		
Model No. Maximum capacity	Puisa Senea 680		gph
Discharge pressure	150	1 12	psig
Hydraulic relief valve setting	100		psig
Materials of construction	Pump - Carbon Steel		100
Calibration Columns	Camp - Carport Glody	<u> </u>	
Quantity	10.00	Later to the state of the state	+
Manufacturer	Koflo		†
Model No.	Contract Submittal		
Volume, gal	Contract Submittel		
Materials of construction	PVC		
Chemical Injection Quill or Static Mixer	7,70		
Quantity	N/A	land	
Manufacturer	NA .		
Materials of construction	N/A		
Strainers			1
Quantity	## 1.1 4 为 1		<u> </u>
Manufacturer	Later		
Model No.	Later		1
Materials of construction	CPVC		
Back-Pressure Valves			
Quantity	2,5 - 2,5 - 2,5 - 3,5 - 3	T	†
Manufacturer	Contract Submittal		1
Model No.	Contract Submittal		
Relief valve setting	100		psig
Materials of construction	CPVC		1
Valves		# · · · _p · · · · · · · · · · · · · · · · · · ·	†
Type	Bail		1
Manufacturer	Contract Submittal		
Model No.	Contract Submittal		
Materials of construction	CFVC		
Materials of constitution	<u> </u>		:
Power consumption for this system/subsystem	0.5		hp
Power consumption for this system subsystem	Proposal 1	Proposal 2	(iib
Sharalasi Faad Gustam		drochloric Acid	
Chemical Feed System	пу	drochierie Acie	1
Pump Information	<u> </u>	The first control of the second control of t	
Quantity	3		
Manufacturer	Pulsafeeder	<u> </u>	
Туре	Hydraulic Actuated Diaphagm		
Model No.	Pulsa Series 680		
Maximum capacity	30		gph
Discharge pressure	150		psig
Hydraulic relief valve setting	100		psig
Materials of construction	Pump - Carbon Steel		ļ
Calibration Columns		T	
Quantity	1.00		
Manufacturer	Koflo		
Model No.	Later		1
Volume, gal	Later		
Materials of construction	PVC		1
Chemical Injection Quili or Static Mixer			
Quantity	2112	T	ļ
3 4 5 5 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	NA:		
Manufacturer			
Materials of construction	·		
Materials of construction Strainers			
Materials of construction Strainers Quantity			
Materials of construction Strainers Quantity Manufacturer	Later		
Materials of construction Strainers Quantity Manufacturer Model No.	Later Later		
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction	Later		
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves	Later Later CPVC		
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Preseure Valves Quantity	Later Later CPVC		
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer	Later Later CPVC		
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No.	Later Later CPVC 2 Contract Submittal Contract Submittal		
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting	Later Later Later CPVC 2 Contract Submittal Contract Submittal 100		psig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction	Later Later CPVC 2 Contract Submittal Contract Submittal		paig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves	Later Later CPVC Contract Submittal Contract Submittal 100 CPVC		beid
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type	Later Later CPVC 2 Contract Submittal Contract Submittal 100 CPVC		psig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer	Later Later CPVC 2 Contract Submittal Contract Submittal 100 CPVC Ball Contract Submittal		peig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Vaives Quantity Manufacturer Model No. Relief vaive setting Materials of construction Valves Type Manufacturer Model No.	Later Later CPVC 2 Contract Submittal Contract Submittal 100 CPVC Ball Contract Submittal Contract Submittal		paig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer	Later Later CPVC 2 Contract Submittal Contract Submittal 100 CPVC Ball Contract Submittal		paig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Model No. Materials of construction	Later Later CPVC 2 Contract Submittal Contract Submittal OPVC Ball Contract Submittal Contract Submittal Contract Submittal Contract Submittal Contract Submittal		paig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Vaives Quantity Manufacturer Model No. Relief vaive setting Materials of construction Valves Type Manufacturer Model No.	Later Later CPVC 2 Contract Submittal Contract Submittal 100 CPVC Bail Contract Submittal Contract Submittal Contract Submittal Contract Submittal CONTRACT Submittal CONTRACT SUBMITTAL CONTRACT SUBMITTAL CONTRACT SUBMI		paig
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Power consumption for this system/subsystem	Later Later CPVC 2 Contract Submittal Contract Submittal 100 CPVC Ball Contract Submittal Contract Submittal Contract Submittal Contract Submittal CPVC 0.5 Proposal 1	Proposal 2	
Materials of construction Strainers Quantity Manufacturer Model No. Materials of construction Back-Pressure Valves Quantity Manufacturer Model No. Relief valve setting Materials of construction Valves Type Manufacturer Model No. Materials of construction Materials of construction	Later Later CPVC 2 Contract Submittal Contract Submittal 100 CPVC Ball Contract Submittal Contract Submittal Contract Submittal Contract Submittal CPVC 0.5 Proposal 1		

eatment System			
Quantity	3		
Manufacturer	Puisafeeder		1
Type	Hydraulic Actuated Diaphagm		+
Model No.	Pulsa Series 680		
Maximum capacity	0.3		gph
Discharge pressure	150		psig
Hydraulic relief valve setting	100		psig
Materials of construction	Pump - Carbon Steel		Daiñ
Materials of construction	rump - Carbon Steel	<u> </u>	
Calibration Columns	+	,	
Quantity	1	<u></u>	
Manufacturer	Kofia	22	
Model No.	Contract Submittal		
Volume, gai	Contract Submittal		
Materials of construction	PVC	<u> </u>	1
Chemical Injection Quili or Static Mixer			
Quantity	N/A		
Manufacturer	N/A		
Materials of construction	N/A		:[
Strainers			
Quantity			
Manufacturer	Contract Submittal		
Model No.	Contract Submittal	BOOK OF BUILDING TO SEE	
Materials of construction	CPVC		
Back-Pressure Valves	<u> </u>	<u> </u>	
Quantity	2		
Manufacturer	Contract Submittal		+
Model No.	Contract Submittal		
Relief valve setting	100		
			psig
Materials of construction	CPVC		-
Valves			
Туре	Bail		ļ
Manufacturer	Contract Submittal		
Model No.	Contract Submittal		
Materials of construction	CPVC		<u> </u>
Power consumption for this system/subsystem	0.5		hp
***	Proposal 1	Preposal 2	
hemical Feed System		Polymer	
Pump Information			T
Quantity	2 Units (2 Solenoid Pumps per Uni	1	
Manufacturer	Fluid Dynamics		
Type	Liquid		
Model No.	Dynablend L4-D		
Maximum capacity	0.4 Neat Polymer		anh
Discharge pressure	35 - 50		gph
		D	paig
Hydraulic relief valve setting	100 (Solenoid Neat Polymer Feed	rumps)	paig
Materials of construction	Carbon Steel Frame - Polypropyler	e read rumps	ļ
Calibration Columns		**************************************	
Quantity			
Manufacturer	Fluid Dynamics		
Model No.			
Volume, gal	200 ml		

	Proposal 1	Proposal 2	
hemical Feed System		Polymer	
Pump Information			
Quantity	2 Units (2 Solenoid Pumps per Un	No. 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to	
Manufacturer	Fluid Dynamics		l '
Туре	Liquid		
Model No.	Dynablend L4-D		
Maximum capacity	0.4 Neat Polymer		gph
Discharge pressure	35 - 50		paig
Hydraulic relief valve setting	100 (Solenoid Neat Polymer Feed	Pumps)	paig
Materials of construction	Carbon Steel Frame - Polypropyle	ne Feed Pumps	1
Calibration Columns			
Quantity			Γ"
Manufacturer	Fluid Dynamics		
Model No.			
Volume, gal	200 ml		
Materials of construction	PVC		
Chemical Injection Quill or Static Mixer			1
Quantity	N/A		
Manufacturer	N/A		
Materials of construction	N/A		
Strainers			
Quantity	The same of the state of the same of the s	Telephone 1 (1) 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Manufacturer	Contract Submittal		
Model No.	Contract Submittel		
Materials of construction	CPVC		
Back-Pressure Valves			
Quantity	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Terra de la composición del composición de la composición de la composición del composición de la composición de la composición de la composición de la composición de la composición del composición de la composición de la composición del composición del composición del composición del composición del composición del composición del composición del composición del compos	
Manufacturer	Contract Submittal		1
Model No.	Contract Submittal		
Relief valve setting	Contract Submittal		psig
Materials of construction	CPVC		
Valves			
Type	Bail		
Manufacturer	Hawwerd		
Model No.			
Materials of construction	CPVC		
Power consumption for this system/subsystem	115 V		hp

6.4.6 Filter Press Equipment

	Proposal 1	Proposal 2	
Manufacturer	Andritz		
ype (Belt verse Plate and Frame) Quantity	Recess Chamber		
Model number	1000/LP/80/72-32		
Frame Type (sidebar / overhead)	Sidebar		+
Automatic Plate Shifter, yes/no	Yes		-
Light Curtains, yes/no	Yes Both Sides		
Total volume	50		ft ³ /press
Number of plates	57		
Design operating pressure	100		psi
Plate size	1000 x 1000		mm
Cake thickness	32		mm
Overall Height	7		ft
Overall Width	7		it
Overall Length Weight Empty	26		ft
Weight Chipty Weight Operating	17,500 23,000		lbs
Influent sludge concentration	3 to 5		ibs %
Dry solids load	30		lb/hr
Belt press sludge throughput rate	ŇA		ft3/min
Moisture in sludge cake	40 to 50		%
Density of sludge cake	70 to 80		lb/ft3
Filter press filtrate solids	50 to 150		ppm
loor Discharge Opening Required			
Length	225 x 46		ft
Width	18.75		ft
Optional cake discharge devices Manifold Pipe Materials	Gravity/Shaker		
vianifoid Pipe materials Manifold Valves	FRP		
Manual - Manufacturer	Max Air	Pt. T. A Third	
Manual - Type	Ball		+
Manual - Material of Construction	FRP		
Automatic - Manufacturer	Max Air		-
Automatic - Type	Ball		
Automatic - Material of Construction	FRP		-
Automatic - Operator Type	Air Actuated		
Automatic - Operator Manufacturer	Max Air		
Orlp Pan / Bombay Door - Material of		공학들 얼마 그는 이름이 있다.	
Construction	Carbon Steel - Painted		
Frame - Material of Construction	Carbon Steel - Painted		
Plate feed style	Center		
Total Cycle time	1 to 1.5		hrs
Fast Fill Slow Fill	5 NA		min
Core Blow	1 to 2		min
Air Blow	1.02		min
Press Dump	30 to 45		min
Ilter Cloth Material	Polypropelene		11.00
Filter cloth weight			oz./yd
-liter cloth fiber type	Mono Mulit		
-ilter cloth weave type	Sateen		
Filter cloth porosity	3 to 5		scfm/ft ²
Total filtration area	970		ft ²
land held pendant, yes/no	Light Curtain		
liter cloth weave type	Sateen		
Manufacture's service trips	5	the control of the co	days
Coatings type / dry film thickness	5		mils
Core Blow Air Demand	30		cím/psi
Air Blow Air Demand Beit width	30 N/A		cfm/psi in
Belt material	NA NA	2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	. (41)
ligh Pressure Cloth Wash, yes/no	Yes	Optional	
Skid Mounted, yes/no	Yes	S S S S S S S S S S S S S S S S S S S	
Skid dimensions, L/W/H	6.8x 7.6 x 3.2	a Compaga Harata Albahara	ft
Total Skid Weight	2500		lbs
Total Press Wash Time	180		min
			. [
Volume of Service Water consumed per wash	3,000		gai
Volume of Water Tank			gai
Wash System Piping Material of Construction	FRP		·
Cloth Wash Operating Pressure	1,450		psl
Skid Mounted Junction Box, yes/no	Yes		
Junction Box NEMA Rating	4X		

Junction Box Material of Construction Stainless Steel	
Manual - Manufacturer Contract Submittal Manual - Type Ball Manual - Material of Construction Contract Submittal Automatic - Manufacturer Contract Submittal Automatic - Material of Construction Contract Submittal Automatic - Material of Construction Contract Submittal Automatic - Operator Type Contract Submittal Automatic - Operator Type Contract Submittal Automatic - Operator Manufacturer Contract Submittal High Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
Manual - Type Manual - Material of Construction Contract Submittal Automatic - Manufacturer Contract Submittal Automatic - Type Contract Submittal Automatic - Material of Construction Contract Submittal Automatic - Operator Type Contract Submittal Automatic - Operator Manufacturer Contract Submittal Automatic - Operator Manufacturer Automatic - Operator Manufacturer Contract Submittal Pump Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Pump Type Contract Submittal Contract Submittal Contract Submittal Contract Submittal Contract Submittal Contract Submittal Contract Submittal Contract Submittal	
Automatic - Manufacturer Contract Submittal Automatic - Type Contract Submittal Automatic - Material of Construction Contract Submittal Automatic - Operator Type Contract Submittal Automatic - Operator Manufacturer Contract Submittal Automatic - Operator Manufacturer Contract Submittal High Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impelier Material of Construction Contract Submittal RPM Contract Submittal	
Automatic - Type Contract Submittal Automatic - Material of Construction Contract Submittal Automatic - Operator Type Contract Submittal Automatic - Operator Manufacturer Contract Submittal Automatic - Operator Manufacturer Contract Submittal High Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
Automatic - Material of Construction Contract Submittal Automatic - Operator Type Contract Submittal Automatic - Operator Manufacturer Contract Submittal High Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Flow Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
Automatic - Operator Type Contract Submittal Automatic - Operator Manufacturer Contract Submittal High Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Flow Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
Automatic - Operator Manufacturer Contract Submittal High Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
High Pressure Cloth Wash Pump Contract Submittal Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impelier Material of Construction Contract Submittal RPM Contract Submittal	
Quantity of Pumps Contract Submittal Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
Pump Manufacturer Contract Submittal Pump Model Number Contract Submittal Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
Pump Model Number Contract Submitted Pump Type Contract Submitted Flow Contract Submitted Head Contract Submitted Casing Material of Construction Contract Submitted Impeller Material of Construction Contract Submitted RPM Contract Submitted	
Pump Type Contract Submittal Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	
Flow Contract Submittal Head Contract Submittal Casing Material of Construction Contract Submittal Impeller Material of Construction Contract Submittal RPM Contract Submittal	·
Casing Material of Construction Contract Submittal Impelier Material of Construction Contract Submittal RPM Contract Submittal	gpm
Impelier Material of Construction Contract Submittal RPM Contract Submittal	pai
RPM Contract Submittal	
Mechanical Seal Type Contract Submittel	
Mechanical Seal Manufacturer Contract Submittal	
Flush/seal water demand per pump, gpm Contract Submittal	ļ. —
Horsepower Contract Submittal	hp
Motor Manufacturer / Model Contract Submittal	
Volts / phase / freq Contract Submittal	+
Design standards (e.g., NEMA/IEEE, IEC)	
Driven equipment maximum brake hp Contract Submittal	hp
Motor namepiate Contract Submittal	hp
Service factor (NEMA/IEEE motors only) Contract Submittal	Inp
Motor bearing type Contract Submittal	
Motor efficiency at nameplate Contract Submittal	hp, %
Bearing lubrication system Contract Submittal	
Space heater rating (watts / voltage /	
phase)	
Fast Fill Feed Pumps N/A	<u></u>
Quantity of Pumps	1
Porso Manufacturer	
Pump Model Number Pump Type	+
Flow	gpm
Head	psi
Casing Material of Constructed	
Impeller Material of Construction	
RPM	
Mechanical Seal Type	
Mechanical Seal Manufacturer	
Husaryseal water demand per pump, gpm	lbn
Horsepower Motor Manufacturer / Model	hp
Volts / phase / freq	T
Design standards (e.g., NEMATÉEE, IEC)	<u></u>
Driven equipment maximum brake hp	hp
Motor nameplate	hp
Service factor-MEMA/IEEE motors only)	
Motor bearing type Motor officiency at correspond	lbp e/
Motor efficiency at nameplate Bearing lubrication system	hp, %
Space heater rating (watts / voltage /	
Siow Fill Feed Pumps	1
Quantity of Pumps 2	
Pump Manufacturer Seepex	
Pump Model Number 17-12	
Pump Type Progressive Cavity	-
Figure	igpm psi
Flow 75	Dai
Head 100	
Head 100 Casing Material of Construction Carbon Steel - Rubber Lined	+
Head 100	
Head 100 Casing Material of Construction Carbon Steel - Rubber Lined Impeller Material of Construction Duplex Stainless Steel Stator- RPM 248 Mechanical Seal Type Contract Submittal	
Head 100 Casing Material of Construction Carbon Steel - Rubber Lined Impeller Material of Construction Duplex Stainless Steel Stator- RPM 248 Mechanical Seal Type Contract Submittal Mechanical Seal Manufacturer Contract Submittal	
Head 100 Casing Material of Construction Carbon Steel - Rubber Lined Impeller Material of Construction Duplex Stainless Steel Stator- RPM 248 Mechanical Seal Type Contract Submittal	gpm

Volts / phase / freq	480/3/60	T
Design standards (e.g., NEMA/IEEE, IEC)	NEMA	
Driven equipment maximum brake hp	Contract Submittal	hp
Motor nameplate	Contract Submittal	hp
Service factor (NEMA/IEEE motors only)	1.15	
Motor bearing type	Contract Submittal	
Motor efficiency at nameplate	Contract Submittal	hp, %
Bearing lubrication system	Contract Submittal	
Space heater rating (watts / voltage /	Contract Submittat	
Press Fully Assembled on Shipment yes/no	Yes	
Quantity of Spatulas Provided	0	
Local Control Panels		
Panel size (L x W x H)	Contract Submittal	ft and in.
Panel approximate weight	Contract Submittal	ibs
Manufacturer	Hoffman	<u> </u>
Programmable Logic Control System		
Manufacturer	Allen-Bradley	
Model No.	ControlLogix	
Filter Press Platform		
Required (yes/no)	Yes	<u> </u>
Platform dimensions, L x W x H	Contract Submittal	ft and in.
Materials of construction	Galvanized Steel	<u> </u>
Structural members not to exceed reaction on	Contract Submittal	bs

6.4.7 Siurry Pumps - Not Required

Jurry Pump	Clarifier Blowdown Sump Pumps A & B - Not Required	1
Pump manufacturer		1
Model No.		
Type		
Connections, size, in./flange class	7	
Suction		
Discharge		
Net weights \	//	
Total pump essembly		lb
Pump (less motor)		lb
Baseplate		lb
Performance Data		
Rotative speed		rpm
Tip speed		ft/sec
Direction of rotation available as viewed from the		
Guaranteed performance		
Capacity at design conditions		gpm
Total head at design conditions		ft
NPSH required at design conditions, relative to		ft
Pump efficiency at design conditions		%
Maximum solid size pump can pass		in
Maximum shutoff head		ft
Power requirements		
At design conditions		hp
At shutoff		hp
Maximum		hp
Flow rate at which maximum power requirement		gpm
Recommended minimum continuous flow		gpm
Recommended maximum continuous flow		gpm
Seal water cooling water flow required & pressure		gpm & ps
Seal injection water quality requirements		
Impeller diameters	X	
Design		in.
Maximum available		in.
Minimum available		in.
Materials		
Casing		
Casing liner	garantari da kalendari kalendari kalendari kalendari da kalendari da kalendari da kalendari da kalendari da ka	
Shaft /		
impeller		
Shaft sleeves		<u> </u>
impeller wearing rings		
Casing wearing rings		
Mechanical shaft seal(s)		
Type of bearings		
Radial /		
Thrust		
Description of bearing lubrication system and		
Mechanical shaft seal		

Model No.			<u> </u>
Shaft diameter			
At bearing location(s)		<u> </u>	ln.
At seal location(s)			lin.
Sleeve, outer diameter			in.
Coupling			
Manufacturer		\\	
Model No.			_
Rafed power, hp/service factor		\	
Other Data			
List of special tools that will be furnished			ļ
Field assembly work required		<u> </u>	
Direct Drive or V-belt Drive	Diament d	3	4
Slurry Pump	Proposal 1	Proposal 2 udge Pumpe A, B, C, & D	
Pump manufacturer	Seepex Seepex	lage rumpe A, B, C, & D	
Model No.	17-6L		
Type	Progressive Cavity		·
Connections, size, in./flange class	Progressive Cavity		
Suction	4"		
Discharge	3*	1	
Net weights	<u> </u>		
Total pump assembly	500		lb
Pump (less motor)	450		b
Baseplate			Ь
Performance Data			1,00
Rotative speed	41		rpm
Tip speed	N/A		ft/sec
input shaft end of the pump (Clockwise or			11000
Counterclockwise or Clockwise and			
counterclockwise)	Clockwise		
Guaranteed performance	Citerwing		<u> </u>
Capacity at design conditions	50		gpm
Total head at design conditions	66		tt
NPSH required at design conditions, relative to			 `
pump shaft center line			ft
Pump efficiency at design conditions			%
Maximum solid size pump can pass			in
Maximum shutoff head			ft
Power requirements			<u>''</u>
At design conditions	5HP	Parity Refined the following the second participation of	hp
At shutoff			hp
Maximum			hp
Flow rate at which maximum power requirement	65		gpm
Recommended minimum continuous flow	0.5		gpm
Recommended maximum continuous flow	65		gpm
Seal water cooling water flow required & pressure	N/A		gpm & psi
Seal injection water quality requirements	NA		
Rotor diameters			
Design	2010 (1910), 1.44 ph (1910), 1910	第二十二章 (1914年) 1914年 -	in.
Maximum available	Contract Submittal		in.
Minimum available	Contract Submittal		in.
Materiala			
Casing	Carbon Steel		
Casing Liner	Carbon Steel - Rubber Lined		
Rotor	Duplex Stainless Steel		
Impeller	NAME OF THE PARTY		
Shaft sleeves	NA.		
Impeller wearing rings	NA NA		
Casing wearing rings Mechanical shaft seal(s)	N/A		
Type of bearings	Yes		
Radial	Contract Submittal	176, 17	
Thrust	Contract Submittal		
Description of bearing lubrication system and	Contract Submittal		
Mechanical shaft seal	The state of the s		
Manufacturer	Burgmann		
Model No.	MG-1-g60-055-Q1Q1 (Hastelloy)		
Shaft diameter		Accessed to the control of the contr	
At bearing location(s)	Contract Submittal		in.
At seal location(s)	Contract Submittal		ln.
Sleeve, outer diameter	Contract Submittal		ln.
Coupling			
Manufacturer	Seépex		
Model No.	Contract Submittal		
Rated power, hp/service factor	Contract Submittal	1	

List of special tools that will be furnished	NA		
Field assembly work required	All Pumps are Totally Assembly of	n a Skid	-
Direct Drive or V-belt Drive	Direct Drive		
	Proposal 1	Proposal 2	
		eed Pumps A & B	T
Pump manufacturer	Seepex		
Model No.	17-6L		
Туре	Progressive Cavity		
Connections, size, in./flange class	Flogressive Cavity	1	 - -
Suction	4*		 -
Discharge	34	 	
	3		
Net weights			
Total pump assembly	500		lb
Pump (less motor)	450		lb
Basepiate			ib
Performance Data			
Rotative speed	71		rpm
Tip speed	N/A		ft/sec
input shaft end of the pump (Clockwise or			
Counterclockwise or Clockwise and			
counterclockwise)	Clockwise		1
Guaranteed performance			
Capacity at design conditions	50	Para Caraca Cara	gpm
Total head at design conditions	66		ft
NPSH required at design conditions, relative to	¥¥		1'
oump shaft center line			ft
Pump efficiency at design conditions			%
			in
Maximum solid size pump can pase			
Maximum shutoff head			ft
Power requirements			1
At design conditions	10		hp
At shutoff	the state of the s		hp
Maximum			hp
Flow rate at which maximum power requirement	65		gprn
Recommended minimum continuous flow	0.		gpm
Recommended maximum continuous flow	65		gpm
Seal water cooling water flow required & pressure	N/A		gpm & p
Seal injection water quality requirements	N/A		Γ
Impeller diameters			
Design	1,44		in.
Maximum available			in.
Minimum available			in.
Materials			
Casing	Carbon Steel		
Casing liner	Carbon Steel - Rubber Lined		
Rotor	Duplex Stainless Steel		
	N/A		
Impeller Short elegans	100		 -
Shaft sleeves	NVA sus		
impeller wearing rings	N/A		 -
Casing wearing rings	N/A		+
Mechanical shaft seal(s)		Alberta Company	
Type of bearings			
Padial	A STATE OF THE STA		
Thrust			
Description of bearing lubrication system and		The second of the second of the second	ļ
Mechanical shaft seal			
Manufacturer	Burgmann		
Model No.	MG-1-g60-055-Q1Q1 (Hastelloy)		ļ
Shaft diameter			
At bearing location(s)			in,
At seal location(s)			in.
Sleeve, outer diameter			in.
Coupling			
Manufacturer	Seepax		
Model No.			
Rated power, hp/service factor			
Other Data			1
List of special tools that will be furnished	N/A		
	TVA		
Field assembly work required	All Pumps are Totally Assembly o	n a Chid	1

	Proposal t	Proposal 2	
Pump	· · · · · · · · · · · · · · · · · · ·	kwash Pumps A & B	
Manufacturer	Galigher		
Model No.	Series 2100		
Type (turbine, sump, etc.)	Cantilever		
Number of stages, each pump Discharge connection size/fiange class	One		
Net weight, each	3.5		. [in
Pump	1,400		ib
Motor	730	 	. lb
Total, pump including motor, baseplate, and coup			- IB
Performance Data		<u> </u>	
Rotative speed	1375		rpm
Minimum distance required from bottom of			
suction bell to bottom of pit, ft	12"		·]
Recommended minimum continuous flow	90		gpm
Guaranteed performance (each pump)	180 gpm (115 TDH) Effluent, 300 (gpm (66 TDH) Backwash	gpm
Capacity at design conditions	Contract Submittal	And the Second Control of the Contro	gpm
head losses through the pump	Contract Submittal		ft. H₂O
Submergence required at design conditions			
(from water surface to bottom of suction bell)	Contract Submittel		in
bell at design conditions	Contract Submittal		ft H₂O
Pump efficiency at design conditions	23		%
Motor efficiency at design conditions	Contract Submittal		%
Maximum shutoff head	Contract Submittal		ft H ₂ O
Power regulrements			
At design conditions	23.41		hp
At shutoff	Contract Submittal		hp
Maximum	Contract Submittat		hp
Pump Construction	High Chrome 340		
Impeller diameters	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		- 1-
Design Maydenum qualishia	13.5 Contract Submittal		in. in.
Maximum available Minimum available	Contract Submittal		lin.
Materials	GOTTURGE GOOTTICE		11111
Column	High Chrome 340		· · · · · · · · · · · · · · · · · · ·
Discharge head	High Chrome 340		***
Bowls, volutes, and diffusers	High Chrome 340		
Shaft	High Chrome 340		
impeller	High Chrome (A05) 354		- 3
Impeller wearing ring	Contract Submittal		
Casing wearing ring	Contract Submittal		3.00
Shaft siseves	Contract Submittal		
Suction bell	Contract Submittal		
Suction strainer	Contract Submittal		lin.
Shaft diameter	Contract Submittal Contract Submittal		in.
Length of sections Length from baseplate to bottom of suction	Contract Submittal		lin.
Line shaft bearings	Contract Coonsition		- ""
Туре	Contract Submittal		
Number	Contract Submittal		
Length	Contract Submittal		<u></u>
Material	Contract Submittal		
Bowl bearings			
Туре	Contract Submittal		
Number	Contract Submittal		
Length Material	Contract Submittal Contract Submittal		
	CONTROL SUDTRICES		
Description of line shaft bearing lubrication system, including required quantity of externally			
system, including required quantity of externally supplied bearing lubrication water, if applicable	Contract Submittet		
Description of bowl bearing lubrication system,	COM GO, COOMME		<u> </u>
including required quantity of externally supplied			
bearing lubrication water, if applicable	Contract Submittal		
Description of shaft seals, including required			
quantity of externally supplied seal water, if	Contract Submittal		
Motor Data			
Manufacturer			
Enclosure	TEFC		
Horsepower at design conditions	40		hp
Service factor	1.15		
Voltage/Phase/RPM	480/3/1800	<u> </u>	
Miscellaneous Data	Contract Submittal		N.
Shipping weight (each pump assembly if more	Contract Submittal		lib

Page 20

Pump	Effluent Pumps C & D (Not Required)	/
Wanufacturer		
Model No.		
Type (turbine, sump, etc.)		
Number of stages, each pump		
Discharge connection size/flange class		ln
Net weight, each		lb
Pump \	/	lb
Motor		lь
Total, pump facluding motor, baseplate, and could		lь
Performance Deta		
Rotative speed		rpm
Minimum distance required from bottom of		1
suction bell to bottom of pit, ft		
Recommended minimum continuous flow		dom.
Guaranteed performance (each pump)		gpm gpm
Capacity at design conditions		
head losses through the pump		gpm ft. H₂O
		IL TIZO
Submergence required aliquesign conditions		-
(from water surface to bottom of suction bell)		in
bell at design conditions		ft H₂O
Pump efficiency at design conditions		%
Motor efficiency at design conditions	/	%
Maximum shutoff head	1	ft H ₂ O
Power requirements		20
At design conditions		lb-
At shutoff		hp
		hp
Maximum Pump Construction		hp
	<u> </u>	
Impeller diameters		
Design	\	ín.
Maximum available		in.
Minimum available		in.
Materials		
Column		1
Discharge head		1
Bowis, volutes, and diffusers		
Shaft		
lmpeller		
Impeller wearing ring	THE CONTRACT VALUE OF THE CONTRACT OF THE PROPERTY OF THE CONTRACT OF THE CON	<u> </u>
Casing wearing ring		
Shaft sleeves		1
Suction beli		
Suction strainer		
Shaft diameter		in.
Length of sections		in.
Length from baseplate to bottom of sugtion		in.
		1113-
Line shaft bearings	1	
Type		
Number		-
Length		
Material	The state of the s	
Bowl bearings		
Type		
Number /		
Length /		
Material		
Description of line shaft/bearing lubrication		
system, including required quantity of externally	The first of the f	
supplied bearing lubrication water, if applicable		
Description of bow bearing lubrication system,		
including required quantity of externally supplied		
bearing lubrication water, if applicable		
Dearing luorication water, if applicable		
Description of shaft seals, including required		-
quantity of externally supplied seal water, if		
Motor Data		
Manyfacturer		
Englosure		
Horsepower at design conditions	The Hard Control of the Control of	hp
Service factor		
/ Voltage/Phase/RPM		
Miscellaneous Data		
Shipping weight (each pump assembly if more		ib
The state of the s	Proposal 1 Proposal 2	
ump	Dirty Backwash Sump Pumps A & B - Not Required)	

Manufacturer	7		
Model No.		 	
Type (turbine, sump, etc.)			<u> </u>
Number of stages, each pump			
Discharge connection size/flange class			in
Net weight, each		/	lb
Pump Motor			lb
Total, pump lacluding motor, baseplate, and coup		/	lb
Performance Data			IID
Rotative spead			rpm
Minimum distance required from bottom of			
suction bell to bottom of pit, ft			
Guaranteed performance (each pump)		/	gpm
Capacity at design conditions			gpm gpm
head losses through the pump			ft, H _p O
Submergence required at design conditions			
(from water surface to bottom of suction hell)			in
bell at design conditions			ft H₂O
Pump efficiency at design conditions			%
Motor efficiency at design conditions Maximum shutoff head	/////		%
Power requirements			ft H₂O
At design conditions			hp
At shutoff			hp
Maximum	/		hp
Pump Construction			
Impeller diameters Design	 	Les and the second second	1
Maximum available			in. in.
Minimum avaliable			ln.
Materials			
Column Discharge head	\ /		
Bowls, volutes, and diffusers	X		
Shaft			
impeller			
Impeller wearing ring			
Casing wearing ring Shaft sleeves			
Suction bell	\		
Suction strainer			
Shaft diameter			in.
Length of sections Length from baseplate to bottom of suction			in. In.
Line shaft bearings	<u> </u>		1111
Type			
Number			
Length Material			
Bowl bearings			
Type /		VERNING TO STATE OF THE STATE O	
Number			
Length /			
Material Description of line shaft bearing lubrication			
system, including required quantity of externally			
supplied bearing lub/scatton water, if applicable			
Description of bow/bearing lubrication system,			
including required quantity of externally supplied			
bearing lubrication water, if applicable Description of shaft seals, including required			
quantity of externally supplied seal water, if			
Motor Data			
Manufacturer			
Englosure Horsepower at design conditions			h-
Service factor			hp
/Voltage/Phase/RPM			
Miscellaneous Data			
Shipping weight (each pump assembly if more	Proposal 1		lb
Pump		Pumps A & B	
Manufacturer	Gallgher	4	

Model No.	Series 100		T
Type (turbine, sump, etc.)	Cantilever		
Number of stages, each pump	One		
Discharge connection size/flange class	2.5		in
Net weight, each			lb .
Pump	900 416		lb lb
Motor Total, pump including motor, baseplate, and coup			lb lb
Performance Data	i joco		
Rotative speed	1,672		rpm
Minimum distance required from bottom of			1
suction bell to bottom of pit, ft	12*		
Recommended minimum continuous flow	100		gpm
Guaranteed performance (each pump)	100 gpm @ 66 TDH		gpm
Capacity at design conditions			gpm
head losses through the pump			ft. H₂O
Submergence required at design conditions (from water surface to bottom of suction bejl) bell at design conditions	Contract Submittal		in ft H₂O
			%
Pump efficiency at design conditions Motor efficiency at design conditions	23		%
Maximum shutoff head			tt H₂O
Power requirements			120
At design conditions	9,33		hp
At shutoff	Contract Submittal		hp
Maximum	Contract Submittal		hp
Pump Construction	High Chrome 340		
Impeller diameters			
Design	10		in.
Maximum avallable			in.
Minimum available			in.
Materials	High Chrome 340	Table 1 Table 1	-
Column Discharge head	High Chrome 340		
Bowls, volutes, and diffusers	High Chrome 340		
Shaft	High Chrome 340		
Impeller	High Chrome (A05) 354		
Impeller wearing ring	Contract Submittal		
Casing wearing ring	Contract Submittal		
Shaft sleeves	Contract Submittal		1
Suction bell	Contract Submittal		
Suction strainer	Contract Submittal Contract Submittal		in.
Shaft diameter Length of sections	Contract Submittal		in.
Length from baseplate to bottom of suction	Contract Submittal		in.
Line shaft bearings	CONTRACT CONTRACT		
Type	Contract Submittal		
Number	Contract Submittal		
Length	Contract Submittal		
Material	Contract Submittal		
Bowl bearings	Canting at School Hail		
Type	Contract Submittal Contract Submittal		+
Number Length	Contract Submittal		-
Material Material	Contract Submittal		
Description of line shaft bearing lubrication			
system, including required quantity of externally			e"
supplied bearing lubrication water, if applicable	Contract Submittal		
Description of bowi bearing lubrication system,			1
including required quantity of externally supplied			1
bearing jubrication water, if applicable	Contract Submittal		
Description of shaft seals, including required			
quantity of externally supplied seal water, if	Contract Submittal		1
Motor Data			+
Manufacturer	TEPA		
Enclosure	TEFC		bn
Horsepower at design conditions	10 1.15	-	: hp
Service factor Voltage/Phase/RPM	480/3/1800		-
Miscellaneous Data	700.0 1000		
**************************************			lb

6.4.9 Local Control Panels

	Proposal 1	Proposal 2
Panel description	PLC	

Panel size (L by W by H)	(72"X118"X18"), (84.12"X78.5"X18.12") - 2 Enclosures ft
Panel approximate weight	Later
Manufacturer	Hoffman

6.4.10 Master - Programmable Logic Control System

	Proposal 1	Proposal 2	
Manufacturer	Alien-Bradley		
Model No.	ControlLogix		
Dimensions (overall, L x W x H)	(72"X118"X18"), (84.12"X78.5"X18.12")	- 2 Enclosures	Tift .
Weight	Later		lb

6.4.11 Shop Fabricated Tanke

	Proposal 1	Proposal 2
Tenk name	Hydrochloric	Storage Tank
Shell material	Tota b	/ Owner
Plate thickness		
Shell		in.
Head or bottom		lin.
Head or top		in.
Dry weight, each		The second secon
Gasket material	Natural Rubber	
Describe the amount of fleid erection work	None	
Vent Dryer		
Manufactuer		
Model Number		
Overflow Check Valve		
Menufactuer	N/A	
Model Number	N/A	

6.4.12 Fiberglass Reinforced Plastic Tanks

	Proposal 1	Proposal 2	
T a nk	Decaturation 1	fanks A & B	
Manufacturer	Augusta Flbergiass		
Tank type (open vs closed top)	Open		
Tank residence time (if applicable)	120 (Approx)		min
Tank materials			
Resin	Dion 9102 VinylEster		
Glass			
Surfacing mat			
Chopped strand mat	Yes		T
Continuous roving			1
Vell	10 - 20 Mil "C" Glass		
Cure	Later		
Postcure	Later		
Material thickness			1
Top head	N/A		
Wall at top	0.3	网络沙漠 化二氢甲烷 化二甲二甲基甲二二	în.
Wali at bottom	0.3	r Arres see to the of the or	in.
Tank bottom	3/8*		ín.
insulation	l NA		
Inside diameter	[a.s. 18] 8 18 18	a fright and the contract was a contract	ft. and in.
Straight side length	16	did in the state of the state of the state of the state of the state of the state of the state of the state of	ft. and in.
Effective volume	8,800 (Approx)		gal
Weight			
Empty	2,300 (Approx) Tank Only		lb
Flooded	74,000 (Approx)		lb
Shipping	2,300 (Approx) Tank Only		lb
Selamic moment	Contract Submittal		lbf-ft
Selsmic shear	Contract Submittal		lb
Wind moment	Contract Submittal		lbf-ft
Wind shear	Contract Submittal		Ь
Anchor balts			
Dia	3/4		in _
Quantity	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Name of supplier to perform shop testing	Augusta Fiberglass		
7	Proposal 1	Preposal 2	

Tank	Congulation Mix Tanks A & B	
Manufacturer	Augusta Fiberglass	
Tank type (open vs closed top)	Open 200 and 1	
Tank residence time (if appicable)	30 (Approx)	min
Tank materials		
Resin	Dion 9102 VinylEster	
Glase		
Surfacing mat		
Chopped strand mat	Yes	
Continuous roving		

[Vall	4000 MILLOLOLO		
Veil Cure	10 - 20 Mil "C" Glass Later		
Postcure	Later		
Material thickness			 -
Top head	N/A	<u> </u>	
Wall at top	0.3		ín.
Wall at bottom	0.3		ln.
Tank bottom	5/16"		in.
Insulation	N/A		
Inside diameter	6		ft. and in.
Straight side length	16		ft. and in,
Effective volume	3,100 (Approx)		gal
Weight		<u> </u>	
Empty	2,100 (Approx) Tank Only		lb
Flooded	27,000 (Approx)		lb
Shipping Seismic moment	2,100 (Approx) Tank Only Contract Submittal		lbf-ft
Seismic shear	Contract Submittal		lb
Wind moment	Contract Submittal	Mary and the second second	lbf-ft
Wind shear	Contract Submittal		lb
Anchor bolts		<u> </u>	
Dia	3/4*		in
Quantity	8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		I
Name of supplier to perform shop testing	Augusta Fibergiasa Proposal 1		
	Proposal 1	Propose 2	
Tank		Tanks A & B	
Manufacturer	Augusta Fibergiass		
Tank type (open vs closed top)	Open		l mala
Tank residence time (if applicable)	30 (Approx)		min
Tank materials Resin	Dion 9102 VinylEster		
Glass	Didit 9 toz Vitty Estei.		·
Surfacing mat			
Chopped strand mat	Yes		
Continuous roving			1
Vell	10 - 20 MII "C" Glass		
Cure	Later		
Postcure	Later		
Material thickness		r	<u> </u>
Top head	NA NA		ļ. ———
Wall at top	0.3		<u>in.</u>
Wall at bottom	0.3 5/16*		in. in.
Tank bottom Insulation	NA VA		BF1.
Inside diameter	6		ft. and in.
Straight side length	16		ft. and in.
Effective volume	3,100 (Approx)		gal
Weight			
Empty	2,100 (Approx) Tank Only		lb
Flooded	27,000 (Approx)		lb
Shipping	2,100 (Approx) Tank Only		lb
Seismic moment	Contract Submittal	Marika in Alexandria di Santi s	lbf-ft
Seismic shear	Contract Submittal		b
Wind moment	Contract Submittal		lbf-ft
Wind shear	Contract Submittal		
Anchor bolts Dia	3/4		in
Quantity	8		ļ
Name of supplier to perform shop testing	Augusta Fiberglass		·
The state of the s	Proposal 1	Proposal 2	
Tank		anks A & B	
Manufacturer	Augusta Fiberglass		
Tank type (open vs closed top)	Open		
Tank residence time (if applicable)	30 (Approx)		min
Tank materials	Disp 0100 MediFates	Internal Control of the Control	
Resin Glass	Dion 9102 VinylEster		<u> </u>
Surfacing mat			
Chopped strand mat	Yes		
Continuous roving			
Vell	10 - 20 Mil °C" Glass		
Cure	Later		
Postcure	Later		

Material thickness			- ₁ .
Top head	N/A [+
Wall at top	0.3		1_
Wall at bottom	0.3		ln.
Tank bottom	5/16"		in.
Insulation	N/A		-liu*
Inside diameter	6		ft. and in.
Straight side length	16		ft. and in.
Effective volume	3,100 (Approx)		gal
Weight	Greet (Approxy		Adi
Empty	2,100 (Approx) Tank Only	· · · · · · · · · · · · · · · · · · ·	lb
Flooded	27,000 (Approx)		ib
Shipping	2,100 (Approx) Tank Only	NACH CALL CONTRACTOR CONTRACTOR	lb
Selsmic moment	Contract Submittal		lbf-ft
Seismic shear	Contract Submittal		lb
Wind moment	Contract Submittal		lbf-ft
Wind shear	Contract Submittal		Ь
Anchor bolts			1
Dia	3/4"		in
Quantity			<u> </u>
Name of supplier to perform shop testing	Augusta Fiberglass		1
[m] [Proposal 1	Proposal-2	
Tank	Coagulant St	orage Tank	
Manufacturer	Augusta Fiberglass		
Tank type (open vs closed top)	Closed Top		1
Tank residence time (if applicable) Tank materials	One (1) Truck Load		min
Resin	Dion 9102 VinylEster		
Glass	Dion 9 to2 virtyiEster		
Surfacing mat			
Chopped strand mat	Yes		
Continuous roving			
Vell	10 - 20 Mil "C" Glass		
Cure	Later		1
Postcure	Later		
Material thickness			
Top head	5/16*	and the second second second	
Wall at top	0.3		in.
Wall at bottom	0.3		in.
Tank bottom	5/16"		in,
Insulation	N/A		
Inside diameter	10:04		ft. and in.
Straight side length	14		ft. and in.
Effective volume	6,000 (Approx)		gai
Weight Empty	3,000 (Approx) Tank Only		100
Flooded	75,000 (Approx)		lb lb
Shipping	3,000 (Approx) Tank Only	erta kirte di Lega pratificiali aktive e ji jet <u>ije.</u> Na ili kirti ili se sala aktivi ili se sala kirti ili se sala aktivi ili se sala aktivi ili se sala aktivi ili	ib
Selsmic moment	Contract Submittal		lbf-ft
Seismic shear	Contract Submittal		lb
Wind moment	Contract Submittal		lbf-ft
Wind shear	Contract Submittal		lb
Anchor bolts			
Dia	3/4*		in
Quantity	La la la la la esta esta esta esta esta esta esta est		
Name of supplier to perform shop testing	Augusta Fiberglass		
	Proposal 1	Proposal-2	
Tank	Siudge Hold		
Manufacturer			
Tank type (open vs closed top)	Open		<u> </u>
Tank residence time (if appicable)	480		min
Tank materials Resin	Dian Oldo Marie		
Glass	Dion 9102 VinylEster		
Surfacing mat			
Chopped strand mat	Yes		
Continuous roving	100		<u> </u>
Veil	10 - 20 Mil "C" Glass		† ····
Cure	Later		
Postcure	· , · · · · · · · · · · · · · · · · ·		
Material thickness			
Top head	N/A:		
Wali at top	0.3		in.

Wall at bottom	0.3	lin.
Tank bottom	3/8*	in.
Insulation	N/A	
inside diameter	8	ft. and in.
Straight side length	18	ft, and in.
Effective volume	5,600	gai
Weight		
Empty	2,400 (Approx) Tank Only	lb
Flooded	56,000 (Approx)	lb
Shipping	2,400 (Approx) Tank Only	lb
Selsmic moment	Contract Submittel	ibf-ft
Seismic shear	Contract Submittal	ib
Wind moment	Contract Submittal	lbf-ft
Wind shear	Contract Submittal	lb
Anchor boits		
Dia	3/4"	in
Quantity	834	
Name of supplier to perform shop testing	Augusta Fiberglass	

6.4.13 Gravity Filters

	Proposal 1	Proposal 2	
Manufacturer	inflico Degremont		
Materials of construction	Carbon Steel - Rubber Lined		
Backwash requirement	12		gpm/sf
Service flow rate	3.75 (With Two (2) Filter Bays in Se	ervice)	gpm/sf
Tank materials	Carbon Steel		
Average effluent turbidity	< 1:		NTU
Average effluent TSS	<2		ppm
Maximum rate of flow increase without effluent			
quality degradation	144 (With all Filters Bay Running)		gpm/hr
Backwash solids concentration	300 - 400		ррт

6.4.14 Large Bore General Service Valves (Furnished with Equipment)

	Proposal 1	Proposal 2
Valve identification description	N/A	
Valve manufacturer	N/A	
Туре	N/A	
Size	NAME OF THE PROPERTY OF THE PR	BODE CONTRACTOR STREET
Wetted materials	N/A	
Valve identification description	N/A	
Valve manufacturer	N/A	
Type	N/A	
Size	N/A:	
Wetted materials	N/A	

8.4.15 Small Bore General Service Valves (Furnished with Equipment)

·	Proposal 1	Proposal-2
Valve Identification description	Process	and the control of th
Valve manufacturer	Xomox	
Type	Plug or Buttefly	
Size	4" Or less	
Wetted materials	Teflon	
Valve identification description	Chemical	
Valve manufacturer	Hayward	
Type	Ballin of Ballin of	
Size	3/4" of less	
Wetted materials	CPVC	

8.4.18 Control Valves (Furnished with Equipment) - Automatic Isolation Valves

	Proposal 1	Proposal 2
Valve identification description	Process	
Valve manufacturer	Хотох	
Туре	Plugate, is ex-	
Size	4" or less	
Wetted materials	Teflon	
Valve identification description	Process	
Valve manufacturer	Xomox	
Туре	Butterfly	
Size	4" or less	
Wetted materials	Teflon	

8.0 ALTERNATES AND PRICING

The Vendor is requested to address alternate proposals by including either of the following statements: "Having compiled with the bidding requirements of your Specifications and attachments, we request due consideration to the attached alternate proposals, complete with prices and descriptive date for comparison to the base proposal or Having compiled with the bidding requirements of your Specifications and attachments, we do not offer an alternate proposal.

The Bidder's base bid shall meet the equipment requirements and match the treatment process as dictated by the attached flow diagrams and specifications contained herein. Alternate treatment methods or proprietary technologies not covered in these specifications should not be included in the Bidder's base proposal. In addition to the base bid, the Bidder may propose alternate bids which include alternate treatment technologies and/or changes to the specified process. The alternate bids must meet the effluent performance guarantees and specifically indicate where the Bidder has deviated from the specification requirements. Justification for these deviations shall also be provided, whether technical or economical in nature. Evaporative treatment methods will not be acceptable to the Purchaser.

9.0	EXCEP	TIONS
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9.1 Exceptions shall be noted in accordance with Paragraphs 14.3 of the General Specifications.

(or attached to our proposals and referenced below), it is understood that all of the provisions contained therei are acceptable to us:				
without exception				
Yes, Please Proposal	with exceptions as	woied benitue:		
		1.54 1.34 1.34		
in the state of th				
	FIRST COLUMN			0.00

We have reviewed your Specifications and all related attachments. Unless specific exceptions are listed below

10.0 SUBCONTRACTORS

During the course of accomplishing work required by this inquiry, we will subcontract certain portions of the work to the firms listed below:

Name and Address of Subcontractor	Work to be Performed
EnPro Technologies, Lee Summit, MO	Lime Silo
SPS Engineering, North Salt Lake, UT	Reactor Clariflers

We understand that any changes in the above designated subcontractors after award of the contract must be pre-approved in writing by the Purchaser.

11.0 SIGNATURE

The undersigned hereby attests and affirms that: the inquiry documents have been read in detail by officers, employees, agents, or representatives of the company named below; that the company named below is fully qualified and able to perform in accordance with the terms and conditions of these inquiry documents; that he/she is an officer or employee of the company named below; that he/she is authorized to submit this Proposal, and, should Purchaser accept this Proposal, or any part or portion thereof, bind the company to the terms of these inquiry documents.

	SIGNATURE:	Rich Ubaldi				
	Title:	Vice President - Industrial				
12.0	NAME OF COMPANY:		Inflico Degremont Inc.		22 77 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
	Telephone Number	804-756-7600				
	Fax Number	804-756-7643			v garage	
13.0	DATE: 8/16/2007					

Equipment only wastewater treatment system proposal rev 0 2/15/2007

Document Request 2 (Documents Produced)

Question 6

Document titled Functional Design Specification (Infilco Degremont, Inc.) is confidential in its entirety.

Document Request 2 (Documents Produced)

Question 6

Documents titled 2008 & 2009 Pilot Test Plant Reports from Chiyoda Corporation are confidential in their entirety.