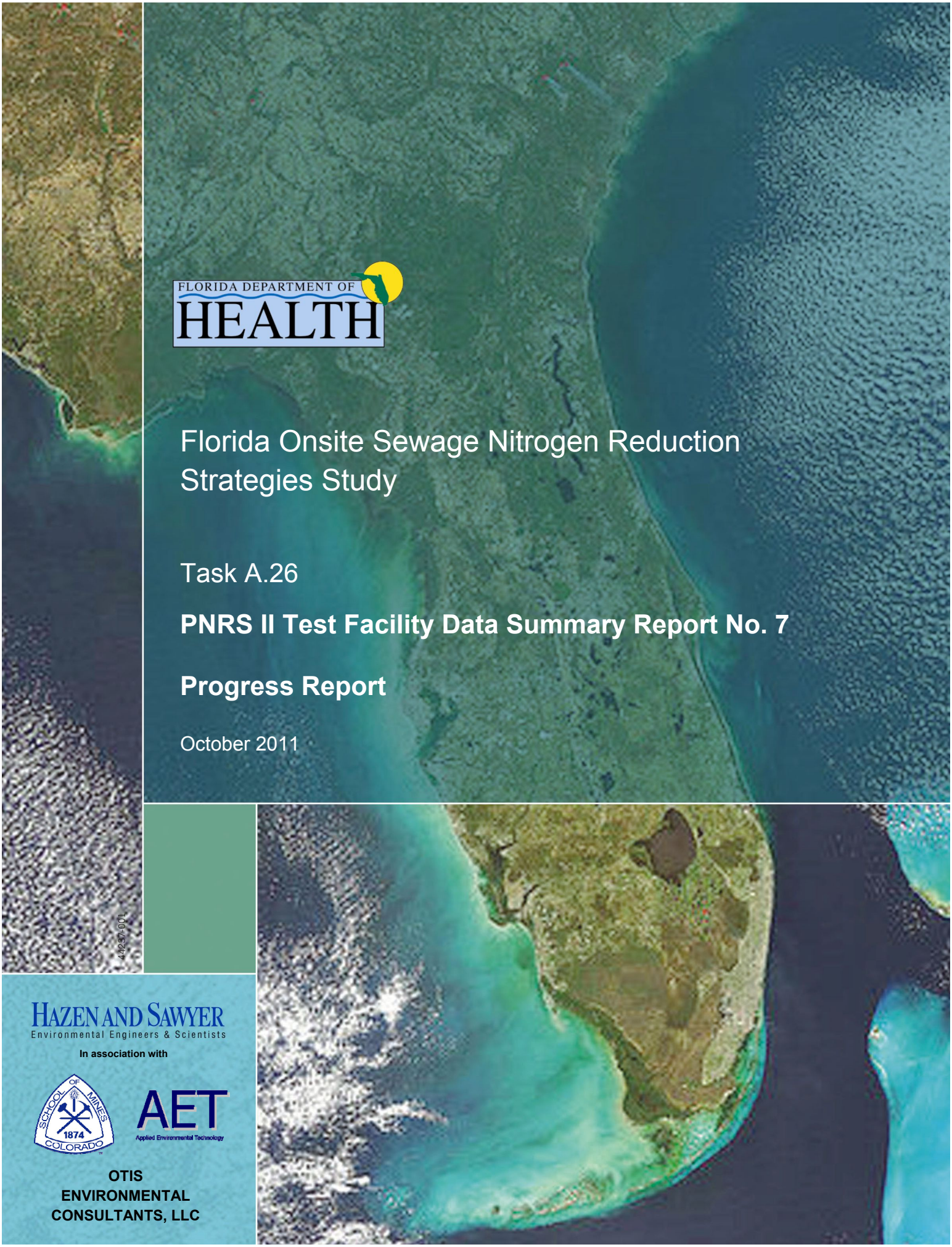

FLORIDA DEPARTMENT OF HEALTH

Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task A.26

PNRS II Test Facility Data Summary Report No. 7

Progress Report

October 2011

4423-001

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Environmental Engineers & Scientists

In association with

SCHOOL OF MINES 1874 COLORADO

AET
Applied Environmental Technology

OTIS ENVIRONMENTAL CONSULTANTS, LLC

Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK A.26
PROGRESS REPORT

PNRS II Test Facility
Data Summary Report No. 7

Prepared for:

Florida Department of Health
Division of Environmental Health
Bureau of Onsite Sewage Programs
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1.0 Background

Task A of the Florida Onsite Sewage Nitrogen Reduction Strategies Study includes the evaluation of passive treatment systems to remove nitrogen from septic tank effluent. The Passive Nitrogen Removal Study II (PNRS II) is a follow-up to the previous experimental evaluations of passive nitrogen removal technologies conducted in Passive Nitrogen Removal Study I. The objective of the PNRS II study is to extend the field pilot testing of the two-stage biofiltration process that was initiated in PNRS I. A unique test facility was constructed for the purpose of this evaluation. The Task A.15 PNRS II Quality Assurance Project Plan (QAPP) documents the objectives, experimental biofiltration systems, monitoring framework, sample frequency and duration, and analytical methods to be used at the PNRS II Test Facility.

2.0 Purpose

This data summary report documents data that was collected in the PNRS II monitoring and sampling event which was conducted September 15, 2011. The corresponding sample event report was submitted as Sample Event Report No. 7, September 2011, as a deliverable under Task A.25. The monitoring event consisted of an assessment and evaluation of PNRS II operation, measurement of flowrates for all systems and flowrate adjustment if warranted, measurement of field parameters, collection of biofilter influent and effluent samples, and their analyses in a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The PNRS II Test Facility is located at the University of Florida Gulf Coast Research and Education Center (GCREC) in southeast Hillsborough County, Florida. The specially designed facility enables the simultaneous operation and performance monitoring of numerous biofilter treatment trains using the same wastewater source. The source of influent wastewater to all PNRS II biofilters is the septic tank effluent from the existing onsite wastewater system serving the GCREC. Details of the design and construction of

the PNRS II test facility were presented previously in Task A.17, A.18, A.19 and A.24 documents.

3.2 Modifications of PNRS II Systems Monitoring and Sampling Locations and Identification

The results of Sample Event No. 1 through 6 and careful observation of PNRS II systems were used to formulate recommendations for modifications to the test systems at the GCREC pilot facility. The modifications that were made following Sample Event No. 6 are presented in this section. All recommendations were based on the overall goal of PNRS II: to provide functional specifications for modular biofiltration components for passive onsite nitrogen reducing wastewater treatment systems.

3.2.1 Modify Operation

Following Sample Event No. 6, a track record of acceptable performance had been established for many PNRS II systems and increasing the flowrates was recommended. The following modifications were made:

Stage 1 Biofilters

- Expanded clay and clinoptilolite media
  - increase loading rates:
    -Single pass: from 3 gal/ft^2-day to 5 gal/ft^2-day STE on June 28, 2011
    -Recycle: from 3 gal/ft^2-day to 6 gal/ft^2-day STE on May 31, 2011

Stage 2 Biofilters

- Sulfur
  - increase loading rates:
    -Single pass coupled: single pass Stage 1 effluent
    from 5.6 to 9.3 gal/ft^2-day; 25.7 to 15.4 hour mean pore water residence time (MPWRT) on June 28, 2011
    -Horizontal: Stage 1 w/recycle combined effluent
    from 10 to 20 gal/ft^2-day; 43 to 21.5 hour MPWRT on June 28, 2011

- Glycerol
  - increase loading rate:
    -from 10 to 20 gal/ft^2-day; 43 to 21.5 hour MPWRT on June 28, 2011

3.3 Monitoring and Sampling Locations and Identification

A schematic of the PNRS II test facility is shown in Figure 1. Septic tank effluent (STE) from GCREC is pumped from PNRS II-STE-T1 into the PNRS II systems through five points of entry: Hydro-1 (Group I), Hydro-2 (Group II), UNSAT-IS-1, UNSAT-IS-2 and UNSAT-IS3. PNRS II biofilters are grouped into the four types of systems shown in Figure 1, Group I, II, III and IV systems. The nomenclature and reactor/sample identification used for the PNRS II test facility sampling events are listed in Table 1. The sample designations listed in Table 1 also largely correspond to the locations at which flow volumes are measured in each sample event.

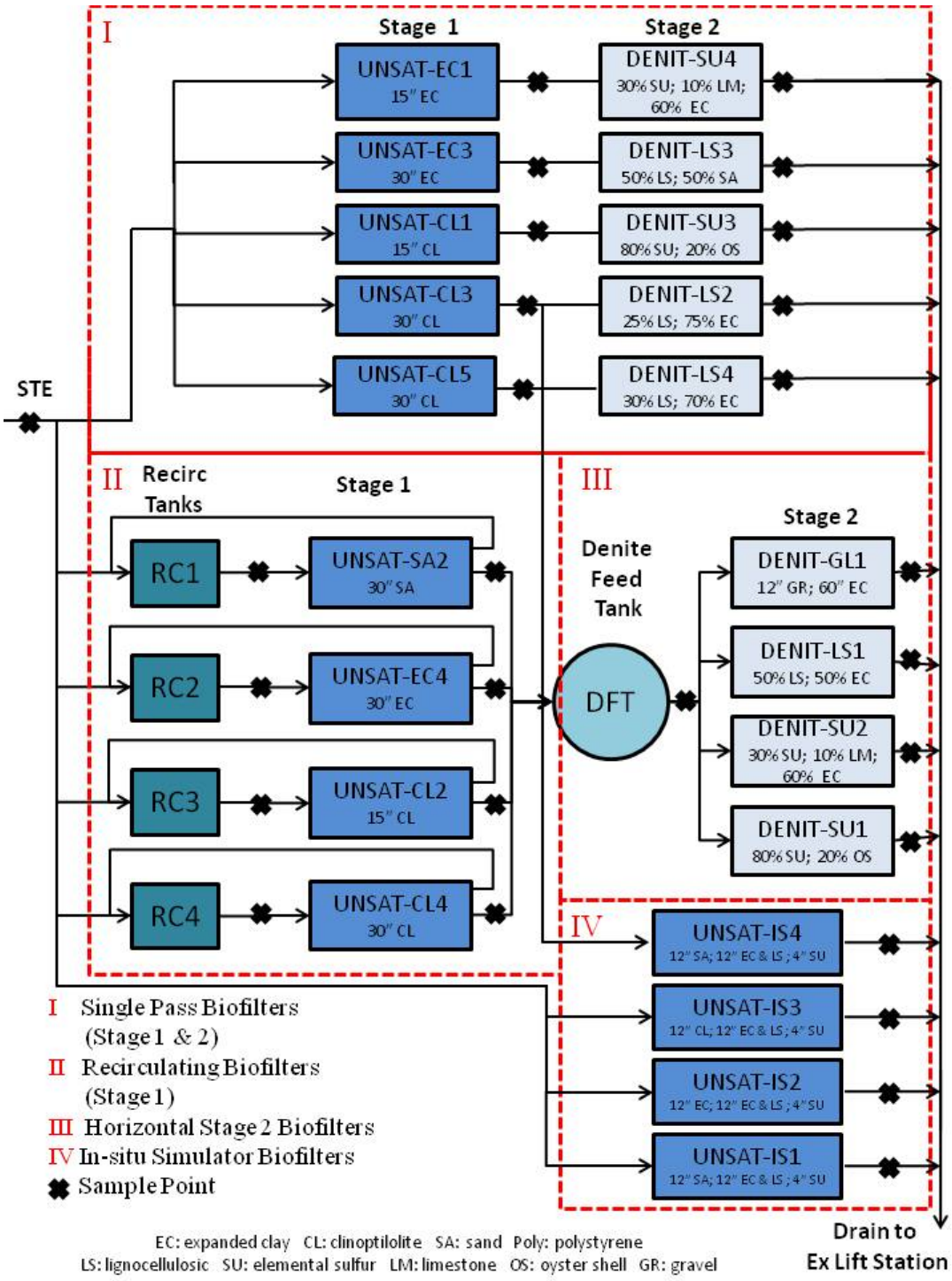


Figure 1
PNRS II Test Facility System Schematic

Table 1
PNRS II Sample Identification

Group (Figure 1)	Sample Location	Sample Identification
	STE PNRS II Storage Tank 1	PNRS II-STE-T1
I	Stage 1 Single Pass Biofilters	UNSAT-EC1
		UNSAT-EC3
		UNSAT-CL1
		UNSAT-CL3
		UNSAT-CL5
	Stage 2 Single Pass Upflow Biofilters	DENIT-SU4
		DENIT-LS3
		DENIT-SU3
		DENIT-LS2
		DENIT-LS4
II	Recirculation Tanks	RC1
		RC2
		RC3
		RC4
	Stage 1 Recirculating Biofilters	UNSAT-SA2
		UNSAT-EC4
		UNSAT-CL2
		UNSAT-CL4
III	Denite Feed Collection Tank	DFT
	Stage 2 Horizontal Biofilters	UNSAT-SU1
		UNSAT-SU2
		UNSAT-LS1
		UNSAT-GL1
IV	In-Situ In-Tank Simulator Single Pass Biofilter	UNSAT-IS1
		UNSAT-IS2
		UNSAT-IS3
		UNSAT-IS4
	In-Situ In-Tank Simulator Single Pass Biofilter Sample Port (below EC & LS mixture and above SU layer)	UNSAT-IS1-SP
		UNSAT-IS2-SP
		UNSAT-IS3-SP
		UNSAT-IS4-SP

3.4 Operational Monitoring

Start-up of the PNRS II test facility occurred on May 17, 2010 and all systems have operated continually since that time. The entire facility operation is checked at least once per week and a detailed log of operational observations and activities is maintained. The programmable logic controller (PLC) which controls many of the dosing and pump controls also records pump run times and flow data from flow meters at the facility, and these data can provide useful insight on facility operations. In the period from the previous sampling event (Sample Event 6) to Sample Event 7, which is the subject of this report, all PNRS II systems generally operated as intended. An exception was on Au-

gust 11-15, 2011, on which date the programmable logic controller (PLC) was not operating likely due to a lightning storm. The PLC controller was reactivated thereafter.

3.5 Water Quality Sample Collection and Analyses

Influent and effluent water quality samples from the PNRS II test systems for Sample Event 7 were collected September 15, 2011. A sample of STE was collected from the feed line connecting STE Storage Tank 1 (PNRS II-STE-T1) to Hydrosplitter 1 which supplies STE to the single pass Stage 1 biofilters (Figure 1). A manual dose event was initiated on the control panel until sufficient STE sample volume was collected in a clean sample container. Stage 1, 2, and in-situ simulator biofilter and recirculation tank effluents were each sampled by directing the entire flow from the biofilter into a large, clean sample container over a period of time sufficient to obtain the desired sample volume (approximately 3.5 liters). Sample containers were immediately placed in coolers on ice prior to subdivision of the composited sample.

The composite samples in the 3.5 liter sample containers were then subdivided into analysis-specific sample containers. The analysis-specific containers were supplied by the analytical laboratory and contained appropriate preservatives. The analysis-specific containers were labeled, placed in coolers and transported on ice to the analytical laboratory. Each sample container was secured in packing material as appropriate to prevent damage and spills, and was recorded on chain-of-custody forms supplied by the laboratory. Chain of custody forms were used to document the transfer of samples from field personnel to the analytical laboratory. One chain of custody form was filled out for each set of samples and placed inside the cooler.

Equipment blank, field blank, and field sample duplicates were taken. The equipment blank was collected using a previously cleaned STE sample collection bottle. The bottle was filled with distilled water provided by the laboratory and allowed to sit for eight minutes. The sample containers were then analyzed for the same parameters as the samples. The field blank was collected by filling sample containers with distilled water that had been transported from the laboratory into the field along with other sample containers. The field sample duplicates were collected immediately subsequent to the regular samples from the same composite sample. The duplicate sample containers for this event were filled with PNRS II T1-STE effluent, DENIT-LS3, DENIT-SU3 effluent, and DENIT-LS4 effluent. Additionally, laboratory split samples were collected immediately subsequent to the regular samples from the same composite sample. The laboratory split sample containers for this event were filled with PNRS II T1-STE effluent and UNSAT-IS1 effluent.

Field parameters were measured using portable electronic probes and included temperature (Temp), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, and specific conductance. Temperature (Temp), dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured with probe tips placed in flow through samplers located directly in the outlet pipe at each sample location. Specific conductance and pH were measured using external sample collection reservoirs. The influent and effluent samples were analyzed by the laboratory for: total alkalinity, total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH_3-N), nitrate nitrogen, (NO_3-N), nitrite nitrogen (NO_2-N), carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), and fecal coliform (fecal). For some of the denitrification biofilters containing elemental sulfur media, influent and effluent sample analyses were also conducted for sulfate (SO_4) and hydrogen sulfide (H_2S). Table 2 lists the analytical parameters, analytical methods, and detection limits for these analyses.

Table 2
Analytical Parameters, Method of Analysis, and Detection Limits

Analytical Parameter	Method of Analysis	Laboratory Detection Limit (mg/L)
Total Alkalinity as $CaCO_3$	SM 2320B	2 mg/L
Total Kjeldahl Nitrogen (TKN-N)	EPA351.2	0.05 mg/L
Ammonia Nitrogen (NH_3-N)	EPA350.1	0.01 mg/L
Nitrate/Nitrite Nitrogen (NO_X-N)	EPA353.2	0.01 mg/L
Carbonaceous BOD ($CBOD_5$)	SM 5210B	2 mg/L
Total Dissolved Solids (TDS)	SM 2540C	10 mg/L
Total Suspended Solids (TSS)	SM 2540D	1 mg/L
Chemical Oxygen Demand (COD)	EPA 410.4	10 mg/L
Orthophosphate as P	EPA 300.0	0.01 mg/L
Total Phosphorus (TP)	SM 4500PE	0.01 mg/L
Fecal Coliform (fecal)	SM9222D	1 ct/100mL
Sulfate (SO_4)	EPA300.0	0.2 mg/L
Hydrogen Sulfide Unionized (H_2S)	SM4500S F	0.01 mg/L
Sulfide	SM4500S F	0.1 mg/L

3.6 Flow Monitoring

Flow rates for all PNRS II systems were calibrated at initial start-up. The flow rates are then measured and recorded at each sampling event and adjusted as necessary to maintain flow rates consistent with the experimental design following the sampling event. Flow volumes are measured just after sampling and field analyses and represent the flow rates in effect during the water quality monitoring. Flow rates are then adjusted as necessary to correspond to the target flow rates in the experimental design. For this Sampling Event, influent flow volumes were measured on September 16, 2011 following the sampling event and reported in the Sampling Event No. 7 Report.

4.0 Results and Discussion

4.1 Operational Monitoring

Start up of the PNRS II test facility occurred on May 17, 2010. The test systems have been operated continuously since the May 17th start up, with the exception of occasional power interruptions or outages (see operation and maintenance log). The power interruptions were of relatively short duration. For the most part, operation of the pilot biofilters was fully and automatically resumed when power was restored. The only exceptions are the three peristaltic pumps: Pump 5 which supplies the two In-Situ simulators UNSAT-IS1 and IS2, Pump 10 which supplies the two column In-Situ simulators UNSAT-IS3 and IS4, and Pump 11 which supplies the four horizontal flow denitrification biofilters. Initially, the peristaltic pumps displayed an error message and required manual restarting upon disruption of the power supply; their off times were somewhat longer than the other system pumps. The peristaltic pump settings were saved through the power outage, and the same pump operation was resumed once the error code was acknowledged. The peristaltic pumps have since been reprogrammed to start automatically in the event of temporary discontinuance of the power supply. Appendix A provides the operation and maintenance log which includes actions taken since start-up. Appendix B provides summary tables of the PLC recorded data of daily runtimes and flows for the test facility between May 19th and September 14th (Day 367 through Day 485 since start-up) used to check general pump operation and performance.

The recycle rates to the recirculating systems are monitored and recorded in the PLC as Pumps 6, 7, 8, and 9 flows. The data shows that the recycle flows are very close to the initially set 44 gpd rate for Pumps 6, 7, 8 and 9 prior to increasing the hydraulic loading rate, indicating that the desired recycle ratio of approximately 3:1 was being met. For the increased loading rate timeframe, the data shows that the recycle flows are very

close to the target 147 gpd rate for Pumps 6, 7, 8 and 9, indicating that the desired recycle ratio of approximately 5:1 was being met.

4.2 Water Quality Analyses

Water quality analytical results for Sample Event No. 7 are listed in Table 3. Quality Control samples, including field blanks, equipment blanks, and external duplicate and lab split samples are also included in this table. Results for the blanks were examined for obvious problems with sample contamination or improper decontamination of sampling equipment. Duplicate and split samples were examined for reproducibility, and where the differences were significant relative to the sample value, the laboratory was notified and requested to verify accuracy in reporting and reanalysis of the sample was requested if warranted. Significant difference determinations for the various lab analyses were based upon a review of reproducibility data in Standard Methods and EPA guidelines as well as on experience of the project team and data accuracy requirements for this project.

Table 4 shows the results of the QC sampling for this sample event, and a calculation of the percent difference between the sample value and the duplicate/split samples. The sample results that are highlighted in this table were forwarded back to the laboratories for verification and potential reanalysis.

The following discussion summarizes the water quality analytical results. The laboratory report containing the raw analytical data is included in Appendix D.

Influent Water Quality The water quality characteristics of STE collected in Sample Event 7 were relatively weak as compared to previous STE samples collected earlier in the PNRS II study. Sample Event 7 STE $CBOD_5$ was quite low and much lower than the typical range generally expected for domestic STE. The measured STE total nitrogen (TN) concentration was 26 mg/L, which is within the range that has been typically reported for Florida single family residence STE, but lower than previous samples from the GCREC system. The performance of the various biofilter systems was compared by considering the changes through treatment of nitrogen species (TKN-N, NH_3-N, and NO_X-N), as well as supporting water quality parameters.

Group I Single Pass Biofilters Effluent NH_3-N levels were below 0.5 mg/L for all five Stage 1 single pass biofilters and all DO levels were greater than 3.9 mg/L (Table 3). TSS and $CBOD_5$ were 3 mg/L or below in all effluents. Organic N ranged from 1.5 to 3.3 mg/L in these same five systems. NO_x-N increased significantly in all Stage 1 biofilter

effluents corresponding to the decrease in TKN from nitrification. The five single pass biofilters performed exceptionally well in removing suspended solids and $CBOD_5$ and in converting ammonium to oxidized nitrogen. Effluent TN of all biofilters was similar to the influent TN, indicating that denitrification was very limited.

NO_X-N was less than 0.5 mg/L in the two single pass upflow denitrification biofilters that contained sulfur media., Effluent SO_4 was higher in the biofilter containing 80% sulfur than in the biofilter with 30% sulfur. NO_x removal was incomplete in all upflow biofilters containing lignocellulosic media, with effluent NO_x of 8 to 20 mg/L. A higher percent of lignocellulosic media in the biofilter media appeared to be accompanied by higher NO_x reductions.

Group II Stage 1 Recirculating Biofilters NH_3-N levels were at or below 0.04 mg/L for all four recirculating Stage 1 biofilters, and effluent DO was 6.2 to 7.2 mg/L. Effluent NO_x-N ranged from 14 to 18 mg/L and organic N from 1.5 to 1.6 mg/L. The nitrification performance of these biofilters was quite acceptable and TN reduction from recirculation (pre-denitrification) averaged 31%. TSS and $CBOD_5$ were 10 mg/L or below in all effluents.

Group III Stage 2 Horizontal Biofilters Influent NO_x-N to these biofilters (from the denite feed tank (DFT)) was 16 mg/L. Effluent NO_x-N was 0.25 mg/L and less in all four Stage 2 horizontal biofilters. The low NO_x-N were accompanied by < 0.3 mg/L DO and ORP of -284 to –366 mV. All horizontal biofilters were highly effective in producing a reducing environment and achieving their NO_x-N reduction goals. DENIT-LS1 with the new lignocellulosic media exhibited complete denitrification, with effluent NO_x-N of 0.24 mg/L.

Group IV In-Situ Simulator Systems For UNSAT-IS1, effluent TKN and NH_3-N were 21 and 8 mg/L, respectively, indicating incomplete ammonification and nitrification. All four in-situ simulator systems exhibited low effluent NO_x-N of less than 1.0 mg/L. In-situ simulator effluent SO_4 concentrations were 53, 120, 200 and 110 mg/L, for IS1, IS2, IS3 and IS4 respectively. For IS3-SP and IS4-SP, the sample taken above the denitrification media saturated sulfur layer, NH_3-N was 0.06 and 0.86 mg/L, respectively, indicating fairly complete nitrification by this point in the media sequence.

UNSAT-IS 4 receives a nitrified influent from UNSAT-CL3 with NO_3-N of 24 and NO_3-N was 1.2 mg/L at the monitoring point above the sulfur layer. This suggests that nitrate removal was occurring above the sulfur layer.

Table 3
Water Quality Analytical Results

Group (Figure 1)	Sample ID	Media Composition	Analytical Laboratory	Sample Date/Time	Sample Type	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	ORP (mV)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NO_2-N (mg/L N)	NO_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	Sulfide (mg/L)	H_2S (mg/L)	SO_4 (mg/L)	Fecal (Ct/100 mL)
	STE Sample																										
	PNRS II STE-Tank 1		Southern	15-Sep-11 11:50	G	28.4	7.4	240	4	262.2	820		15	35	97	26.02	26	4	22	0.01	0.01	0.02	22.02	5.6	1.6	31	8400
	PNRS II STE-Tank 1-D		Southern	15-Sep-11 11:55	G	28.4	7.4	250	4	262.2	820		20	30	93	25.02	25	2	23	0.01	0.01	0.02	23.02	5.5	1.5	32	8900
	PNRS II STE-Tank 1-D2		Pace	15-Sep-11 11:50	G	28.4	7.4	258	4	262.2	820	327	7	37.4	132	27.55	27.5	1.8	25.7	0.025	0.025	0.05	25.75		1.3	34.5	
I	**Stage 1 Single Pass Biofilters Effluent**																										
	UNSAT-EC1	15" Expanded Clay	Southern	15-Sep-11 11:45	G	28.8	7	140	3.9	57.6	810		2	2	10	25.9	3.8	3.26	0.54	22	0.1	22.1	22.64	0.1	0.01	55	690
	UNSAT-EC3	30" Expanded Clay	Southern	15-Sep-11 11:40	G	28.7	7.1	160	5.6	25.3	826		1	2	10	23.91	1.9	1.88	0.023	22	0.01	22.01	22.033				3
	UNSAT-CL1	15" Clinoptilolite	Southern	15-Sep-11 11:35	G	28.7	7.4	130	6.6	42.9	825		2	2	10	26.01	2	1.98	0.016	24	0.01	24.01	24.026	0.1	0.01	53	40
	UNSAT-CL3	30" Clinoptilolite	Southern	15-Sep-11 11:30	G	28.2	7.3	190	6.4	24.8	903		3	2	10	25.51	1.5	1.48	0.02	24	0.01	24.01	24.03				120
	UNSAT-CL5	30" Clinoptilolite	Southern	15-Sep-11 11:20	G	28.8	7.5	140	6.7	14.3	817		2	2	10	26.51	1.5	1.48	0.018	25	0.01	25.01	25.028				410
	Stage 2 Single Pass Upflow Biofilters Effluent																										
	DENIT-SU4	10% Limestone; 30% Sulfur; 60% Expanded Clay	Southern	15-Sep-11 10:00	G	26.8	7.2	140	0.1	-355.8	1004		3	8	10	3.13	2.9	1.40	1.5	0.22	0.01	0.23	1.73	1.4	0.49	260	740
	DENIT-LS3-REV	50% New Lignocellulosic; 50% Sand	Southern	15-Sep-11 09:50	G	27.2	7.4	220	2.3	-159.6	739		4	2	10	10.91	1.3	1.27	0.033	9.1	0.51	9.61	9.643				3
	DENIT-LS3-REV-D	50% New Lignocellulosic; 50% Sand	Southern	15-Sep-11 09:55	G	27.2	7.4	210	2.3	-159.6	739		3	2	10	9.96	1.3	1.27	0.03	8.2	0.46	8.66	8.69				2
	DENIT-SU3	80% Sulfur; 20% Oyster Shell	Southern	15-Sep-11 09:40	G	27	7.4	150	0.1	-354.9	1126		2	6	10	1.53	1.3	0.75	0.55	0.22	0.01	0.23	0.78	0.98	0.26	320	30
	DENIT-SU3-D	80% Sulfur; 20% Oyster Shell	Southern	15-Sep-11 09:45	G	27	7.4	140	0.1	-354.9	1126		6	6	10	1.75	1.5	0.99	0.51	0.24	0.01	0.25	0.76	0.78	0.21	330	20
	DENIT-LS2-REV	25% New Lignocellulosic; 75% Expanded Clay	Southern	15-Sep-11 09:35	G	26.8	7.5	220	3.1	19.1	862		2	2	10	22.37	1.9	1.86	0.039	20	0.47	20.47	20.509				4
	DENIT-LS4-REV	30% New Lignocellulosic; 70% Expanded Clay	Southern	15-Sep-11 09:25	G	26.3	7.7	200	3.3	21.5	809		1	2	10	17.99	1.6	1.58	0.023	16	0.39	16.39	16.413				16
	DENIT-LS4-REV-D	30% New Lignocellulosic; 70% Expanded Clay	Southern	15-Sep-11 09:30	G	26.3	7.7	200	3.3	21.5	809		1	2	10	17.91	1.4	1.38	0.021	16	0.51	16.51	16.531				14
II	**Recirculation Tanks Effluent**																										
	RC1		Southern	15-Sep-11 10:05	G	26.8	7.3	150	0.3	-119.8	706		3	4	15	16.51	2.5	1.2	1.3	14	0.01	14.01	15.31				4300
	RC2		Southern	15-Sep-11 10:10	G	26.3	7.2	140	0.7	-123.4	696		1	4	10	17.31	5.3	2.3	3	12	0.01	12.01	15.01				4600
	RC3		Southern	15-Sep-11 10:15	G	25.8	7.3	140	0.1	-128.6	713		1	5	10	16.45	3.1	0.1	3	13	0.35	13.35	16.35				3600
	RC4		Southern	15-Sep-11 10:20	G	26.6	7.4	180	0.1	-129.3	750		1	4	10	12.41	2.8	0.2	2.6	9.6	0.01	9.61	12.21				4900
	Stage 1 Recirculating Biofilters Effluent																										
	UNSAT-CL4	30" Clinoptilolite	Southern	15-Sep-11 08:55	G	26.3	7.4	170	7.2	28.7	767		5	2	10	15.61	1.6	1.56	0.037	14	0.01	14.01	14.047				5
	UNSAT-CL2	15" Clinoptilolite	Southern	15-Sep-11 09:10	G	26.1	7.2	120	6.2	29.9	697		10	2	18	18.51	1.5	1.48	0.023	17	0.01	17.01	17.033				760
	UNSAT-EC4	30" Expanded Clay	Southern	15-Sep-11 09:20	G	26	7	110	7.1	51.7	693		1	2	10	18.51	1.5	1.48	0.021	17	0.01	17.01	17.031				50
	UNSAT-SA2	30" Sand	Southern	15-Sep-11 09:00	G	26	7	130	6.7	8	687		1	2	10	19.61	1.6	1.58	0.017	18	0.01	18.01	18.027				70
III	**Denite Feed Tank (Tank 3)**																										
	DFT		Southern	15-Sep-11 08:20	G	25.8	7.4	130	6.8	6.2	711		1	2	10	17.71	1.7	1.68	0.016	16	0.01	16.01	16.026	0.1	0.01	58	66
	DFT-D		Southern	15-Sep-11 08:25	G	25.8	7.4	120	6.8	6.2	711		2	2	10	17.81	1.8	1.77	0.034	16	0.01	16.01	16.044	0.2	0.06	58	71
	Stage 2 Horizontal Biofilters Effluent																										
	DENIT-SU1	80% Sulfur; 20% Oyster Shell	Southern	15-Sep-11 07:45	G	22	7	170	0.2	-365.9	1009		1	41	89	2.65	2.4	1.20	1.2	0.24	0.01	0.25	1.45	30	14	200	9
	DENIT-SU2	10% Limestone; 30% Sulfur; 60% Expanded Clay	Southern	15-Sep-11 07:50	G	22.5	7	170	0.1	-343.5	961		1	27	40	8.24	8	5.80	2.2	0.23	0.01	0.24	2.44	24	11	210	10
	DENIT-LS1-REV	50% New Lignocellulosic; 50% Expanded Clay	Southern	15-Sep-11 07:55	G	22.2	7.2	210	0.3	-284.3	644		2	9	24	0.62	0.38	0.36	0.02	0.23	0.01	0.24	0.26				1
	DENIT-GL1	12" Gravel; 60" Expanded Clay	Southern	15-Sep-11 08:00	G	22.5	6.6	330	0.1	-283.5	794		5	13	20	0.94	0.7	0.43	0.27	0.23	0.01	0.24	0.51				140
IV	**In-situ Simulator Biofilters Effluent**																										
	UNSAT-IS1 (receives STE)	4" Coarse Sand; 8" Fine Sand; 12" Mix (60% EC, 40% New Ligno); 4" Sulfur	Southern	16-Sep-11 12:05	G	13.4	6.8	280	9.5	-158.3	831		3	6	44	21.24	21	13.00	8	0.23	0.01	0.24	8.24	1.2	0.7	53	42
	UNSAT-IS1-D (receives STE)	4" Coarse Sand; 8" Fine Sand; 12" Mix (60% EC, 40% New Ligno); 4" Sulfur	Pace		G	13.4	6.8	273	9.54	-158.3	831			6.4	53.7	10.55	10.5	1.10	9.4	0.025	0.025	0.05	9.45		1.1	89.2	
	UNSAT-IS2-SP (receives STE)			16-Sep-11 11:55	G	29.3	6.3	130	1.4	-130.9	667		4	7	71	1.82	1.8	1.52	0.28	0.01	0.01	0.02	0.3	1.8	1.5	72	1
	UNSAT-IS2 (receives STE)	4" EC>1.53mm; 8" EC As-Is; 12" Mix (60% EC, 40% New Ligno); 4" Sulfur	Southern	16-Sep-11 12:10	G	10.1	7	240	7.7	-59.6	865		4	9	130	2.04	1.8	1.41	0.39	0.23	0.01	0.24	0.63	1.8	0.86	120	1
	UNSAT-IS3-SP (receives STE)	Above 4" Sulfur layer	Southern	16-Sep-11 16:00	G			59					2	7	44	21.4	3.4	3.34	0.061			18	18.061	0.1	0.01	75	1
	UNSAT-IS3 (receives STE)	4" CL 8X14, 8" CL 16X50; 12" Mix (60% EC, 40% New Ligno); 4" Sulfur	Southern	16-Sep-11 12:10	G	22.9	7.49	180	8.23	-13.9	923		8	3	48	2.71	1.7	1.21	0.49	0.68	0.33	1.01	1.5	0.1	0.01	200	1
	UNSAT-IS4-SP (receives UNSAT-CL3 NO_3)	Above 4" Sulfur layer	Southern	16-Sep-11 11:55	G			270					2	5	61	3.3	2.1	1.24	0.86			1.2	2.06	0.1	0.01	63	1
	UNSAT-IS4 (receives UNSAT-CL3 NO_3)	4" Coarse Sand; 8" Fine Sand; 12" Mix (60% EC, 40% New Ligno); 4" Sulfur	Southern	16-Sep-11 12:10	G	22.4	6.75	400	2.11	-222.7	1136		6	2	69	2.04	1.8	1.21	0.59	0.23	0.01	0.24	0.83	0.1	0.01	110	1
	Field Blank	Reagent Water	Southern	15-Sep-11 11:10		26	8.2	9.9	7.9	11.2	36		1	2	10	0.07	0.05	0.05	0.005	0.01	0.01	0.02	0.025				1
	Equipment Blank	Reagent Water - Cleaned STE Bottle #1	Southern	15-Sep-11 11:00		25.9	7.8	9.9	7.9	7.7	32		1	2	10	0.07	0.05	0.05	0.005	0.01	0.01	0.02	0.025				1

Notes:

[1]Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_x

[2]Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH_3.

[3]Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH_3 and NO_x.

EC: expanded clay, CL: clinoptilolite, PS: polystyrene, SU: elemental sulfur, LS: lignocellulosic, GL: glycerol, OS: oyster shell, NS: sodium sesquicarbonate, GR: gravel

D.O. - Dissolved oxygen

G - Grab sample

Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.

Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analysis.

Orange - shaded data points indicate too many colonies were present. The numberic value represents the dilution factor times the maximum reportable number of colonies.

Purple-shaded data points indicate results based upon colony counts outside the method indicated ideal range.

Blue-shaded data points indicate matrix spike was outside typical range. All other QC criteria were acceptable.

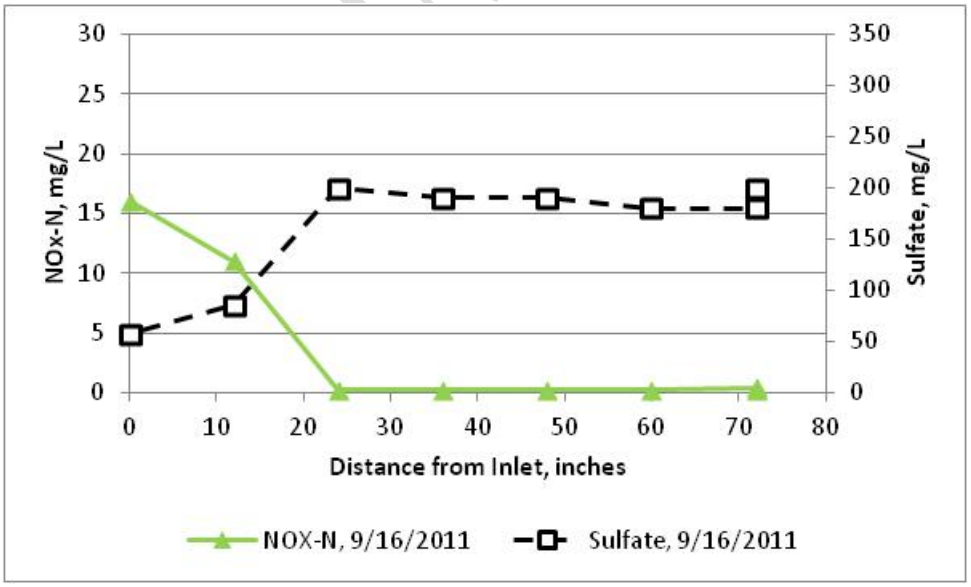
Table 4
Sample Event No. 7 External QC Sample Results

Sample ID	Total Alkalinity (mg/L)		TSS (mg/L)		$CBOD_5$ (mg/L)		TKN (mg/L N)		NH_3-N (mg/L N)		NO_3-N (mg/L N)		NO_2-N (mg/L N)		SO_4 (mg/L)		Fecal	
	Value	% diff	Value	% diff	Value	% diff	Value	% diff	Value	% diff	Value	% diff	Value	% diff	Value	% diff	Value	% diff
STE Lab	240		15		35		26		22		0.01		0.01		31		8400	
STE Dup	250	4.2%	20	33.3%	30	-14.3%	25	-3.8%	23	4.5%	0.01	MDL	0.01	MDL	32	3.2%	8900	
STE Split	258	7.5%	7	-53.3%	37.4	6.9%	27.5	5.8%	25.7	16.8%	0.025	MDL	0.025	MDL	34.5	11.3%		
LS3 Lab	220		4		2		1.3		0.033		9.1		0.51				3	
LS3 Dup	210	-4.5%	3	-25.0%	2	MDL	1.3	0.0%	0.03	-9.1%	8.2	-9.9%	0.46	-9.8%			2	
SU3 Lab	150		2		6		1.3		0.55		0.22		0.01	MDL	320		30	
SU3 Dup	140	-6.7%	6	200.0%	6	0.0%	1.5	15.4%	0.51	-7.3%	0.24	9.1%	0.01	MDL	330	3.1%	20	
LS4 Lab	200		1		2		1.6		0.023		16		0.39				16	
LS4 Dup	200	0.0%	1	0.0%	2	MDL	1.4	-12.5%	0.021	-8.7%	16	0.0%	0.51	30.8%			14	
DFT Lab	130		1		2		1.7		0.016		16		0.01		58		66	
DFT Dup	120	-7.7%	2	100.0%	2	MDL	1.8	5.9%	0.034	112.5%	16	0.0%	0.01	MDL	58	0.0%	71	
IS1 Lab	280		3		6		21		8		0.23		0.01		53		42	
IS1 Split	273	-2.5%			6.4	6.7%	10.5	-50.0%	9.4	17.5%	0.025	MDL	0.025	MDL	89.2	68.3%		
Field Blank	9.9		1		2		0.05		0.005		0.01		0.01				1	
Equipment Blank	9.9		1		2		0.05		0.005		0.01		0.01				1	

[1]STE lab sample and duplicate sample agree, therefore the STE split sample is eliminated.

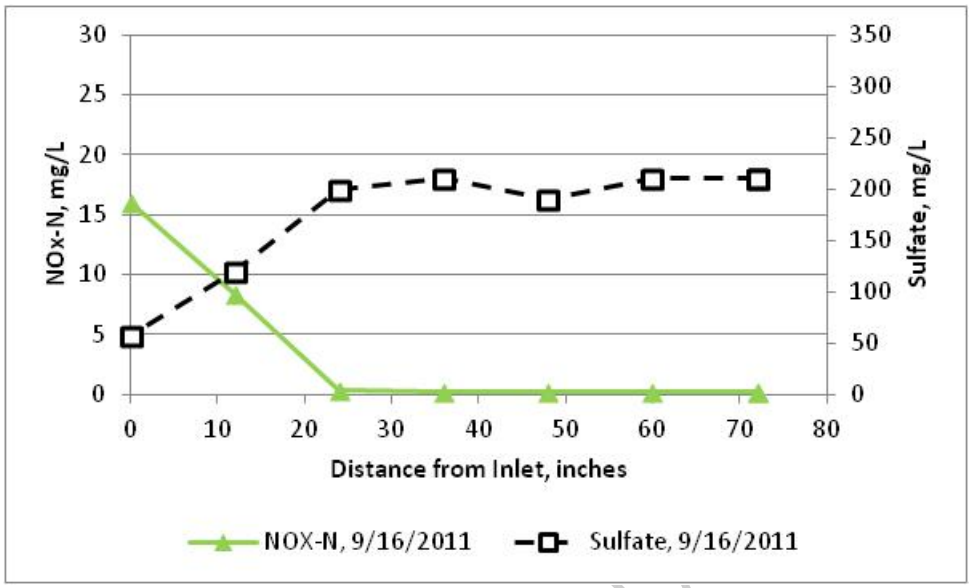
4.3 Stage 2 Denitrification Biofilter Profiles

Sample ports were installed along the length of the horizontal Stage 2 denitrification biofilters to enable longitudinal profiling of nitrogen species and other water quality parameters. The four horizontal Stage 2 biofilters (DENIT-SU1, DENIT-SU2, DENIT-LS1 and DENIT-GL1) are configured as 6 inch diameter columns of 72 inch media depth and receive as influent the composited effluent of the four Stage 1 recirculation systems. Sample ports were installed at 12 inch increments along the length of the biofilters, enabling six point longitudinal profiling. Figures 2 through 5 depict the NO_x-N and sulfate (for sulfur media) concentrations along the longitudinal profile of these four biofilters for the sample events on September 15 and 16, 2011. The two sulfur containing biofilters reduced the NO_x-N concentration to non-detect levels within the first 24 inches (Figures 2 and 3), while substantially complete NO_x-N removal in the lignocellulosic media biofilter was accomplished at 72 in. (Figure 4). The glycerol biofilter achieved complete NO_x-N reduction within 12 inches of the inlet (Figure 5). Effluent sulfate levels for the sulfur containing biofilters are shown in Figures 2 and 3. In both cases, sulfate levels increase in the entrance region of the biofilter where nitrate (and presumably molecular oxygen) is being depleted. An increase in sulfate levels is not seen along the biofilter length in regions where external electron acceptors have been depleted.



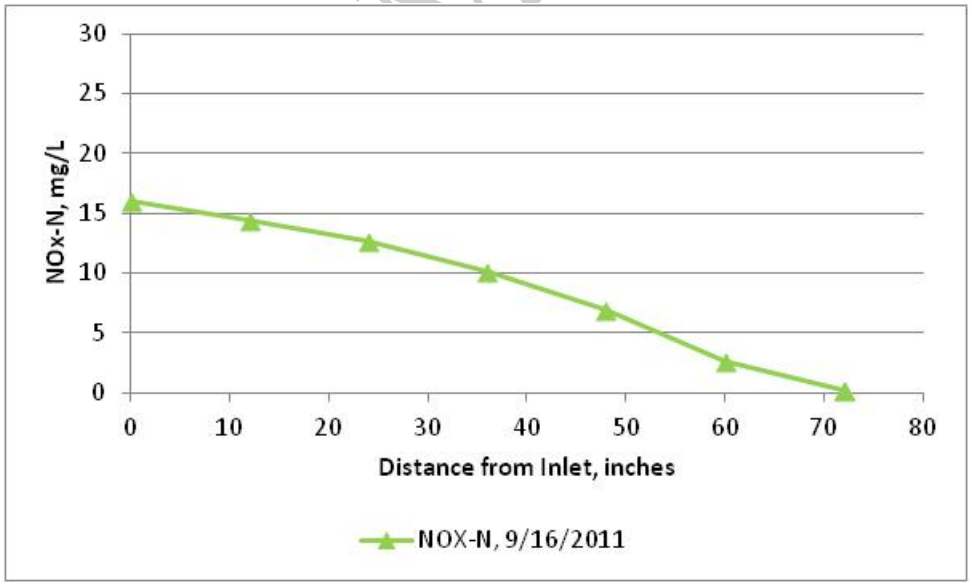
[1]Biofilter contains 80% sulfur / 20% oyster shell mixture.

Figure 2: DENIT-SU1 Longitudinal Profile



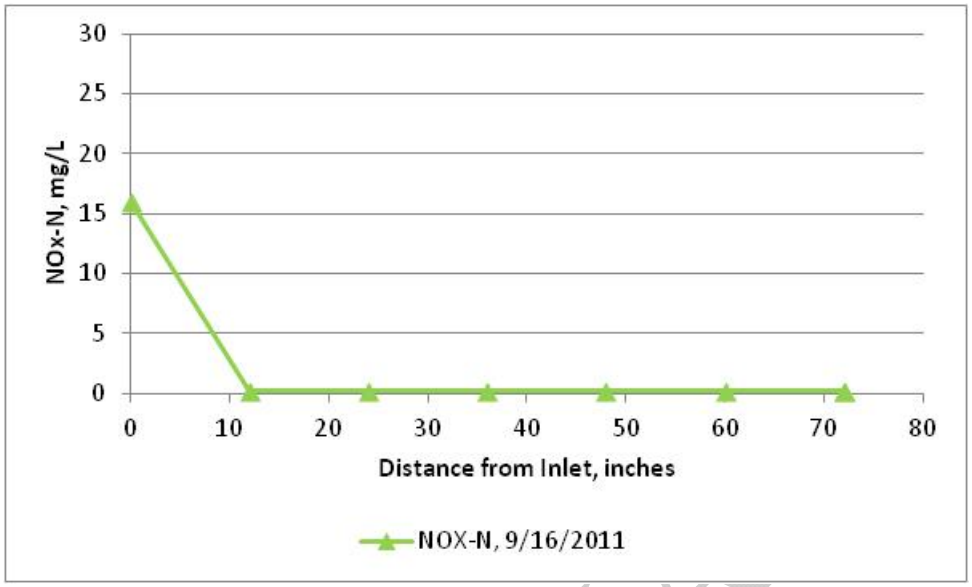
[1]Biofilter contains 10% limestone / 30% sulfur / 60% expanded clay mixture.

Figure 3: DENIT-SU2 Longitudinal Profile



[1]Biofilter contains 50% new lignocellulosic / 50% expanded clay mixture.

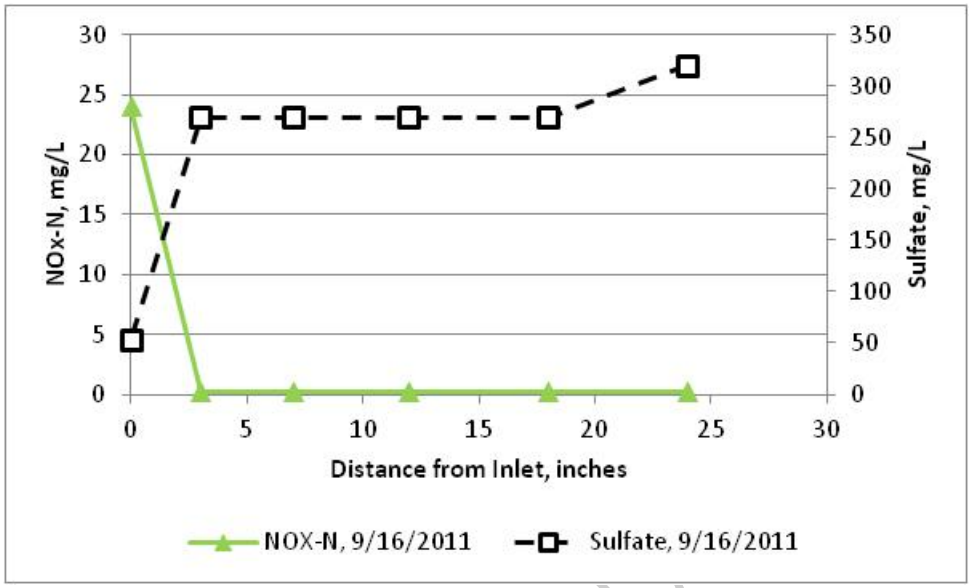
Figure 4: DENIT-LS1 Longitudinal Profile



[1]Biofilter contains 12" gravel, 60" expanded clay, glycerol is added to influent.

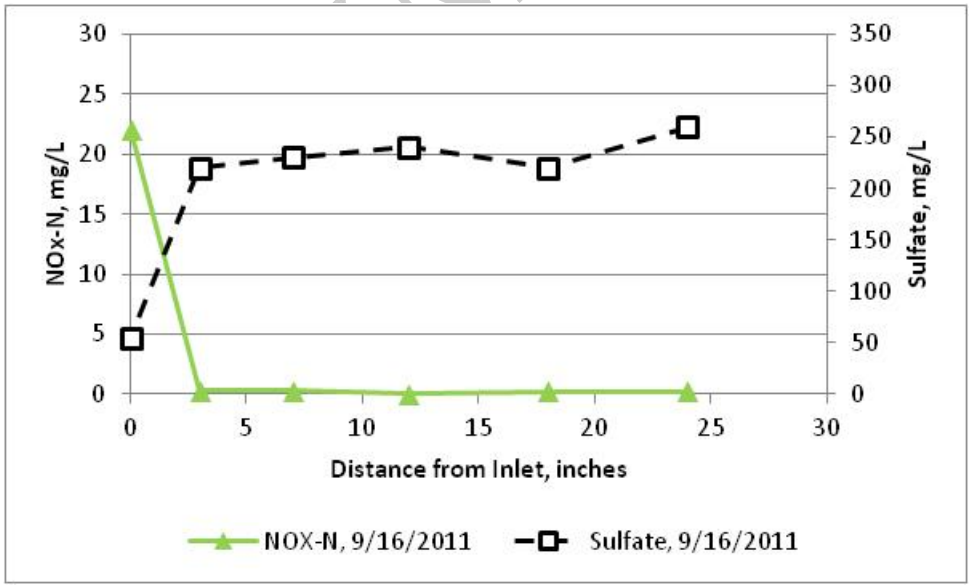
Figure 5: DENIT-GL1 Longitudinal Profile

Sample ports were installed at different media depths in the upflow Stage 2 denitrification biofilters (DENIT-SU3, DENIT-SU4, DENIT-LS2, DENIT-LS3 and DENIT-LS4) to enable depth profiling of nitrogen species and other water quality parameters. The five Stage 2 upflow biofilters are directly connected to the single pass Stage 1 biofilters and are configured as 22 inch diameter circular upflow filters of 24 inch media depth. Sample ports were installed at 3, 7, 12, and 18 inch increments along the length of the biofilter, enabling five point longitudinal profiling. Figures 6 through 10 depict the NO_x-N and sulfate (for sulfur media) concentrations along the longitudinal profile of these five biofilters for the sample events on September 15 and 16, 2011. As shown in Figures 6 and 7, both the Stage 2 upflow biofilters which contain sulfur media reduced the NO_x-N concentration to almost non-detect levels within the first 3 inches. The three lignocellulosic upflow biofilters did not reduce the NO_x-N concentration to non-detect levels in the final effluent (Figures 8, 9 and 10). However, the profile sample taken at 18 inches from the inlet indicates almost complete denitrification. The reason for this difference is unknown, but one possible explanation is that the final effluent sample was collected as part of the sample event the day before the profile samples were taken. In the upflow biofilters with sulfur media, the sulfate concentration increased rapidly in the entrance regions of steep NO_x gradients but was more constant after NO_x was depleted.



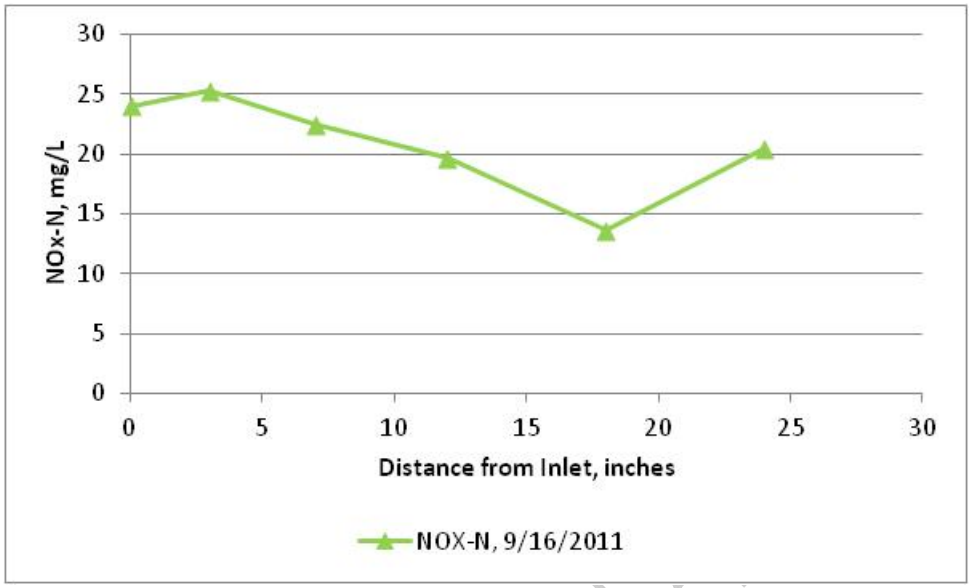
[1]Biofilter contains 80% sulfur / 20% oyster shell mixture.

Figure 6: DENIT-SU3 Longitudinal Profile



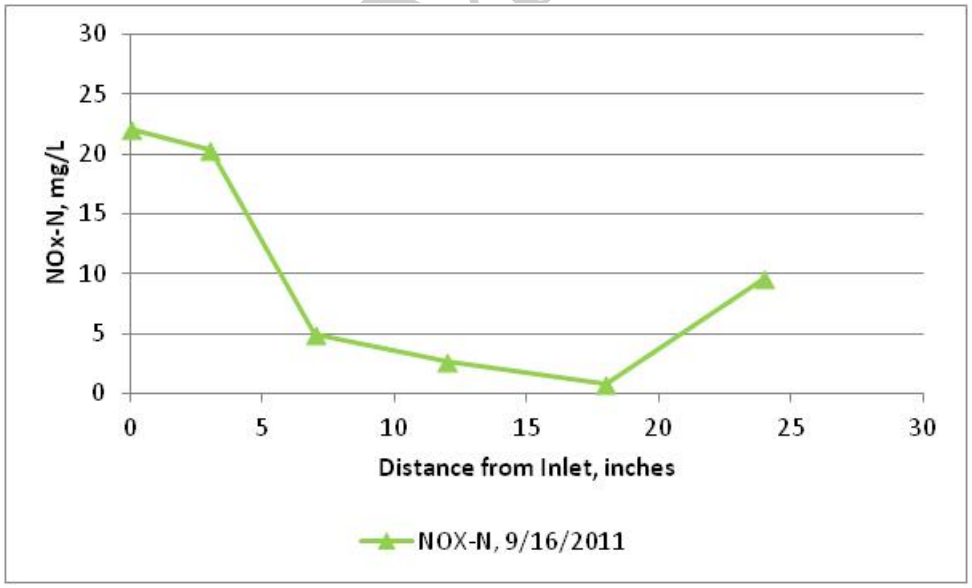
[1]Biofilter contains 10% limestone / 30% sulfur / 60% expanded clay mixture.

Figure 7: DENIT-SU4 Longitudinal Profile



[1]Biofilter contains 25% new lignocellulosic / 75% expanded clay mixture.

Figure 8: DENIT-LS2 Longitudinal Profile



[1]Biofilter contains 50% new lignocellulosic / 50% sand mixture.

Figure 9: DENIT-LS3 Longitudinal Profile

[1]Biofilter contains 30% new lignocellulosic / 70% expanded clay mixture.

Figure 10: DENIT-LS4 Longitudinal Profile

4.4 Flow Monitoring

Influent and effluent flows were measured, recorded, and adjusted as necessary to maintain flow rates consistent with the experimental design following the sampling event. Flow measurements and adjustments are made following collection of liquid samples and field parameter analyses.

A flow test was conducted September 16, 2011. These flow measurements are considered to represent those in effect leading up to and during Sample Event 7. The measured volumes and relative errors between measured and target flow rates are presented in Appendix C, Table 1. For the Group I systems, the measured STE inputs to the five Stage 1 biofilters were within 15% of the target volume. Measured effluent volumes for Stage 1 single pass biofilters (Stage 2 influent) for the five biofilters were within 17% of the target volume for four of the five systems (Table C.1). The UNSAT-SU3 biofilter influent was 24% higher than the target volume indicating that there may be a plug in the influent line.

For the Group II systems, all measured STE volumes to the Stage 1 recirculation tanks were within 9% of target volumes. The four recycle flow volumes as recorded by the PLC were within 5% of target volumes based on the increased experimental design recycle ratio of 5.0. The calculated recycle ratios (i.e. recycle flow volume divided by the STE

flow volume) for the four recirculation systems were within 15% of the target recycle ratio of 5.0.

For Group III systems, the measured influent volumes to the Stage 2 horizontal denitrification biofilters were all within 2% of target.

For Group IV biofilters, the UNSAT-IS1 measured influent volume was within 36% of the target volume. The UNSAT-IS2 measured influent volume was within 65% of the target volume. Both of these biofilters are dosed using the same pump and were not within the target volume. The UNSAT-IS3 and UNSAT-IS4 measured influent volumes were within 5% of target volumes.

5.0 PNRS II Sample Event No. 7: Summary and Recommendations

5.1 Summary

The results of the seventh sampling event serve to confirm that the experimental systems are functioning as intended and provide the basis upon which to make system adjustments and modifications. The Sample Event No. 7 results indicate that:

- Delivered flowrates to all biofilters (except IS3 and IS4) continued to be within 15% of target;
- Septic tank effluent (STE) quality supplied to PNRS II systems has been reasonably characteristic of typical household STE quality due to system modifications, but concentrations of $CBOD_5$ and nitrogen decreased in this sample event;
- All nine Stage 1 unsaturated biofilters produced effluent NH_3-N of 0.5 mg/L or less;
- Six out of nine Stage 2 saturated biofilters produced effluent NO_x-N of 0.25 mg/L or less;

These results provide continuing support of the nitrogen reduction potential of the PNRS II biofiltration systems.

5.2 Recommendations

Sample Event 7 was the last funded sample event for the PNRS II test facility. The passive biofiltration systems being evaluated in PNRS II have great potential to be sustainable and low cost nitrogen removal systems that are appropriate for small, local scale wastewater treatment in Florida. A critical technology development question is how long passive biofiltration systems will operate while successfully removing nitrogen. Long term operation is the only way to address this critical issue. It is recommended to keep the PNRS II systems operational for Groups I and III. The project team will be able to monitor operation of the PNRS II systems while monitoring the soil and groundwater test facility also located at GCREC. However, significant maintenance requirements will not be performed, and there is no additional funding at this time for additional water quality analyses.

Appendix A: Operation & Maintenance Log

Table A.1
Operation and Maintenance Log

Date	Description
5/17/2010	Start-up
5/20/2010	Pump 1 not in Auto, LL float alarm, refilled Tank 1 to HIGH float
5/24/2010	Glycerol batch #1 prepared (125 mL glycerol; 1875 mL DI water), feed rate ~ 8 mL/dose
5/26/2010	LL float alarm, refilled Tank 1 to HIGH float
6/1/2010	Replaced glycerol tubing
6/4/2010	LL float alarm, refilled Tank 1 to HIGH float, determined that LOW float is faulty
	Revised floats so that old Low Float is now High float
	Revised program installed so that only LOW Float turns on/off Pump 1
6/8/2010	Glycerol batch #2 prepared (125 mL glycerol; 1875 mL DI water), feed rate ~ 8 mL/dose
6/18/2010	Pump 1 screen cleaned with hose
6/21/2010	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
	Pump 8 was on "OFF", turned back to "AUTO"
6/22/2010	Pump 5 had turned off, turned back on at 9:32 am
6/28/2010	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
	Replaced glycerol tubing, kink in top, added elbow
	Russ replaced existing GCREC mound Pump 2 ~ 11:00 am
	All Systems Flow Check
7/1/2010	Sample Event #1
7/2/2010	Pump 1 screen cleaned with hose
7/8/2010	Glycerol tubing had released to bottom of container, replaced with polyethylene tubing
	Tank 1 LOW Float alarm, revised magnet distance to shorten Pump 1 runtime
	Pump 1 screen cleaned with hose
7/12/2010	Pump 5 Error Code 18, cleared alarm and restarted pump
7/14/2010	UPS beeping, problem with receptacle, temporary fix with extension cord
7/15/2010	Electrician fixed receptacle
7/16/2010	Per Dr. Stanley all condensate flow diverted from septic system
	Russ fixed existing GCREC Mound Pump 2 which had not been running
	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
	Glycerol batch #3 prepared (125 mL glycerol; 1875 mL DI water), feed rate ~ 8 mL/dose
	Capillary mat added to PS-1

7/19/2010	IS 1 changed discharge (rotated 180°) now 15 inches of saturation from bottom of tank
7/20/2010	IS 2 changed discharge (rotated 180°) now 15 inches of saturation from bottom of tank
7/26/2010	Removed PS1 capillary mat from inside mesh bag, replaced with new mat on top of bag
	Glycerol batch #4 (70 mL glycerol; 1930 mL DI water), feed rate ~ 10 mL/dose
8/3/2010	Glycerol batch #5 (70 mL glycerol; 1930 mL DI water), feed rate ~ 10 mL/dose
8/4/2010	Cleaned crosses in Stage 1 Recirculating Biofilters
	Added tees to outlet of RC1 and RC4 tanks to alleviate blockage build-up
	Replaced Hydrosplitter 1 & 2 tubing
	Replaced Stage 2 horizontal tubing from Pump 11
	Cleaned Stage 2 horizontal sample ports
	Lowered Pump 1 Low Float 2 wraps to decrease volume in tank(decrease residence time)
8/10/2010	Glycerol batch #6 (70 mL glycerol; 1930 mL DI water), feed rate ~ 10 mL/dose
	Raised Pump 1 Low Float 1 wrap because float down was below the hole
8/12/2010	Revised tubing connection at top of In-Situ simulator tanks to elbow
8/17/2010	Glycerol batch #7 (70 mL glycerol; 1930 mL DI water), feed rate ~ 10 mL/dose
	Added tees to outlet in RC2 and RC3 tanks as well
	Revised RC tanks discharge piping to flexible hose
8/19/2010	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
8/23/2010	Possible leak detected at Recirc Tank #2 for P7
8/27/2010	Glycerol batch #8 (70 mL glycerol; 1930 mL DI water), feed rate ~ 10 mL/dose
8/31/2010	Sample Event #2
9/1/2010	Replaced elbow for Recirc Tank #2 (STE tubing) to fix leak
	All Systems Flow Check
9/7/2010	Glycerol batch #9 (70 mL glycerol; 1930 DI water), feed rate ~ 10 mL/dose
	Removed PS1 capillary mat
9/9/2010	Replaced Pump 5 pump tubing
9/10/2010	Cut the LS4 inlet pipe and used a drain snake to unclog both elbows
9/13/2010	Glycerol batch #10 (70 mL glycerol; 1980 DI water), feed rate ~ 10 mL/dose
9/17/2010	Modified Pump 7 runtime to 15 seconds per dose
9/21/2010	Reconnected the glycerol tubing between bottle and pump head which had separated
	Added sample ports to recirculation pump tank discharge lines for flow measurement
9/28/2010	Glycerol batch #11 (70 mL glycerol; 1930 DI water), feed rate ~ 10 mL/dose
	New clear glycerol bottle with graduated sides, replaced tubing
10/5/2010	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
10/6/2010	Glycerol batch #12 (30 mL glycerol; 1970 DI water), feed rate ~ 10 mL/dose
10/7/2010	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps

10/8/2010	Modified Pump 1 discharge pipe to extend through Tank 1 hole in baffle wall
10/11/2010	DENIT-GL-1 nitrified STE influent tubing had disconnected, reattached
	Calibrated IS1 and IS2 tubing
	Calibrated Stage 2 horizontal tubing
10/14/2010	Glycerol batch #13 (30 mL glycerol; 1970 DI water), feed rate ~ 10 mL/dose
	Built new in-situ columns IS3 and IS4
10/15/2010	Unclogged PS1 discharge pipe
	Cleaned Pump 1 intake screen
	Lowered Pump 1 Low Float 1 wrap to decrease volume in tank
10/18/2010	Completed IS3 and IS4 piping, started dosing @ 9:30 am
	Added 3” coarse sand to UNSAT-IS1 for complete nitrification
10/19/2010	Started dye test DENIT-LS2 and DENIT-LS3
	Lowered Pump 1 Low Float 1 wrap to decrease volume in tank(to decrease residence time)
10/20/2010	Calibrated IS3 and IS4 tubing
	Glycerol batch #14 (15 mL glycerol; 985 DI water), feed rate ~ 10 mL/dose
10/22/2010	Moved Pump 1 to effluent baffle tee of existing GCREC Tank 1
	Converted UNSAT-PS1 to recirculating biofilter
10/25/2010	Glycerol batch #15 (15 mL glycerol; 985 DI water), feed rate ~ 10 mL/dose
	DENIT-SU4 media ~5.5" below initial level
	Removed DENIT-SU4, DENIT-SU2 and DENIT-LS2 media
	Cleaned tanks
	Replaced DENIT-SU2 media (30% sulfur, 10% limestone, 60% expanded clay mixture)
	Replaced DENIT-SU4 media (30% sulfur, 10% limestone, 60% expanded clay mixture)
	Replaced DENIT-LS2 media (25% lignocellulosic, 75% expanded clay mixture)
10/27/2010	Glycerol batch #16 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
11/1/2010	Glycerol batch #17 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
11/5/2010	Glycerol batch #18 (27 mL glycerol; 986.5 DI water), feed rate ~ 10 mL/dose
11/10/2010	Sample Event #3
11/11/2010	Glycerol batch #19 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
11/18/2010	Glued UNSAT-IS3 and UNSAT-IS4 discharge piping to stop potential leaks
	Glycerol batch #20 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
	Calibrated UNSAT-IS3 and IS4 tubing
11/19/2010	All Systems Flow Check
11/24/2010	Glycerol batch #21 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
11/29/2010	Glycerol batch #22 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
	Threaded and glued UNSAT-IS3 and UNSAT-IS4 petcock valves

12/1/2010	Tank 1 low-low float alarm activated, high float had activated in Tank 1 preventing Pump 1 to run. Cleared both alarms
12/3/2010	Cleared plug in DENIT-LS4 influent piping
	Replaced Hydrosplitter 1 & 2 tubing
	Replaced Pump 11 pump and system tubing
	Replaced Pump 5 pump and system tubing
	Glycerol batch #23 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
12/7/2010	Hydrosplitter 1 Flow Check
	Calibrated UNSAT-IS3 and IS4 tubing
12/10/2010	Glycerol batch #24 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
12/13/2010	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
12/14/2010	Increased Pump 15 runtime to 6:1 recycle rate
12/17/2010	Glycerol batch #25 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
12/22/2010	UNSAT-IS3 and IS4 effluent samples sent to Southern
12/23/2010	DENIT-LS4, LS2, SU3, LS3, and SU4 effluent sample to Southern
	Glycerol batch #26 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
12/27/2010	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
12/30/2010	Hydrosplitter 1 Flow Check
	Glycerol batch #27 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
	All Systems Flow Check
1/6/2011	Glycerol batch #28 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
1/11/2011	UNSAT-IS3 and IS4 effluent Sample Event #4 samples sent to Southern
	Ponding at surface of UNSAT-IS1 and IS2
	Cleared line blockage at outlet from UNSAT-IS1 and IS2
1/13/2011	Sample Event #4
	Glycerol batch #29 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
1/14/2011	Stage 2 Profile Samples sent to Southern
1/17/2011	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
	All Systems Flow Check
	Cleaned all recirculation system Stage 1 distribution pipes with tap water
	Pump 7 was air locked - restarted
1/18/2011	Hydrosplitter 1 Flow Check - calibration
1/21/2011	Glycerol batch #30 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
1/25/2011	Disassembled and cleaned UNSAT-IS1, IS2, IS3, IS4; DENIT-LS1, LS2, LS3, LS4
1/26/2011	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
	Installed new media UNSAT-IS1, IS2
	Installed new media DENIT-LS1

1/28/2011	Installed new media UNSAT-IS3, IS4
	Installed new media DENIT-LS2,LS3, LS4
	Replaced Pump 5 pump & system tubing
	Replaced Pump 10 pump & system tubing
1/31/2011	Recalibrated Pump 5 & 10
	Glycerol batch #31 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
2/2/2011	UNSAT-IS Flow Check
2/8/2011	Glycerol batch #32 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
2/16/2011	All Systems Flow Check
	Glycerol batch #33 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
	Cleaned all recirculation system Stage 1 distribution pipes with tap water
2/22/2011	Glycerol batch #34 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
3/2/2011	Glycerol batch #35 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
3/4/2011	Cleaned Pump 1 intake screen
	Glycerol batch #36 (13.5 mL glycerol; 1000 DI water), feed rate ~ 10 mL/dose
3/14/2011	Glycerol batch #37 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
	Pump 9 airlocked
	Started IS3 and IS4 sample collection
3/15/2011	Collected IS3 and IS4 sample
3/17/2011	Sample Event #5
3/18/2011	Stage 2 Profile Samples sent to Southern
3/21/2011	Glycerol batch #38 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
3/23/2011	All Systems Flow Check
	Pump 9 airlocked
3/28/2011	Glycerol batch #39 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
4/2/2011	PLC Panel power failure - completely turned off
	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
4/6/2011	Glycerol batch #40 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
4/8/2011	Calibrated Hydrosplitters 1 and 2
	Replaced Hydrosplitter 1 & 2 tubing
	Adjusted Pump 4 and 14 runtimes
4/14/2011	Glycerol batch #41 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
	Revised UNSAT-PS1 Stage 1 media from polystyrene to clinoptilolite
4/21/2011	Glycerol batch #42 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
4/28/2011	Glycerol batch #43 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
5/5/2011	Glycerol batch #44 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose

5/11/2011	Flow check
	Glycerol batch #45 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
5/18/2011	Glycerol batch #46 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
5/19/2011	Sample Event #6
	All Systems Flow Test
5/27/2011	Glycerol batch #47 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
5/31/2011	Increased Pump 14 runtime to 6 gpd/SF loading rate for recirc systems
	Increased Pump 6-9 runtime to 5:1 recycle ratio
	Cleaned all recirculation system Stage 1 distribution pipes with tap water
	Releveled top layer of media within recirculation sytem Stage 1 biofilters
6/3/2011	Glycerol batch #48 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
6/6/2011	Cleaned flowmeters on discharge line of Pump 4 and 14
6/10/2011	Glycerol batch #49 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
6/17/2011	Glycerol batch #50 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
6/21/2011	Pump 5 and 11 Error Code 18, cleared alarm and restarted pumps
6/23/2011	Intermediate sampling event (lignocellulosic biofilters)
	Not enough volume in Pump 7 pump tank for full dose, cleaned Stage 1 distribution pipe
6/28/2011	Increased Pump 4 runtime to 5 gpd/SF loading rate for single pass systems
	Increased Pump 11 dose volume to 20 gpd/SF loading rate for horizontal Stage 2 biofilters
	Cleaned all recirculation system Stage 1 distribution pipes with tap water
	Sampled IS biofilters
6/29/2011	Glycerol batch #51 (27 mL glycerol; 1973 DI water), feed rate ~ 10 mL/dose
7/5/2011	Glycerol batch #52 (13 mL glycerol; 987 DI water), feed rate ~ 15 mL/dose
7/6/2011	Glycerol batch #53 (13 mL glycerol; 987 DI water), feed rate ~ 20 mL/dose
7/8/2011	Glycerol batch #54 (13 mL glycerol; 987 DI water), feed rate ~ 20 mL/dose
	Cleared plug in RC4 effluent pipe
7/12/2011	Glycerol batch #55 (27 mL glycerol; 1973 DI water), feed rate ~ 20 mL/dose
7/14/2011	Glycerol batch #56 (7 mL glycerol; 493 DI water), feed rate ~ 20 mL/dose
7/18/2011	Glycerol batch #57 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
7/19/2011	Cleaned all recirculation system Stage 1 distribution pipes with tap water
7/21/2011	Glycerol batch #58 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
	Cleaned glycerol feed tubing
7/25/2011	Glycerol batch #59 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
	Cleaned tees on RC tank outlet and discharge hose
	Replaced IS1 discharge tubing
7/28/2011	Glycerol batch #60 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose

8/1/2011	Glycerol batch #61 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
8/9/2011	Glycerol batch #62 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
8/11/2011	Glycerol batch #63 (13 mL glycerol; 987 DI water), feed rate ~ 20 mL/dose
8/15/2011	Control panel error code. Reset. Last stored data is from 8/10
	Glycerol batch #64 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
8/18/2011	Glycerol batch #65 (27 mL glycerol; 1973 DI water), feed rate ~ 20 mL/dose
8/22/2011	Glycerol batch #66 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
8/25/2011	Glycerol batch #67 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
8/29/2011	Glycerol batch #68 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
9/1/2011	Sampled Sulfur biofilters
	Glycerol batch #69 (27 mL glycerol; 1973 DI water), feed rate ~ 20 mL/dose
	Replaced horizontal Stage 2 influent tubing
9/2/2011	Glycerol batch #70 (13 mL glycerol; 987 DI water), feed rate ~ 20 mL/dose
	Replaced Hydrosplitter 1 & 2 tubing
9/6/2011	Glycerol batch #71 (27 mL glycerol; 1973 DI water), feed rate ~ 20 mL/dose
9/8/2011	Flow check
	Glycerol batch #72 (17 mL glycerol; 1233 DI water), feed rate ~ 20 mL/dose
9/12/2011	Glycerol batch #73 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
	Started IS3 and IS4 sample collection
9/14/2011	Took IS3 and IS4 samples
	Started IS3-SP and IS4-SP sample collection
	Started Stage 2 Horizontal sample collection
9/15/2011	Sample Event #7
	Glycerol batch #74 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose
9/16/2011	Sample Event #7 Profiles
	All Systems Flow Test
9/19/2011	Glycerol batch #75 (34 mL glycerol; 2466 DI water), feed rate ~ 20 mL/dose

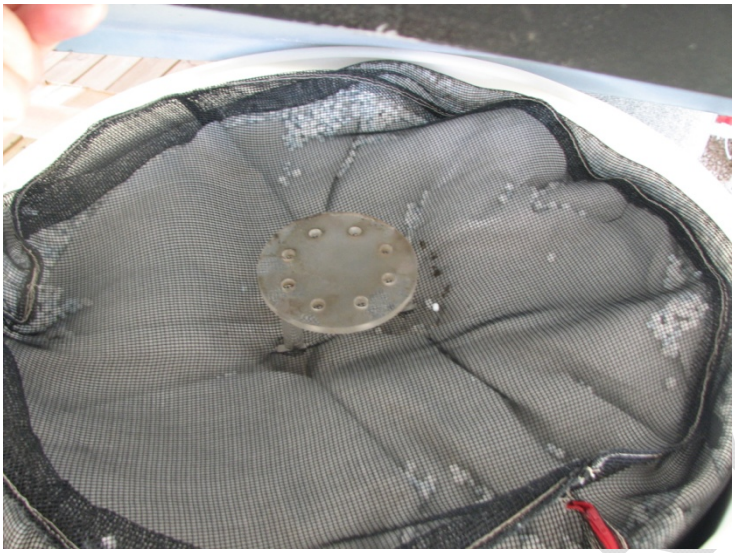


Figure A.1
Capillary Mat Installed above Polystyrene Media 7/16/10

Figure A.2
Revised In-situ Simulators Discharge Piping 7/20/10

Figure A.3
RC1 Outlet Tee 8/4/10

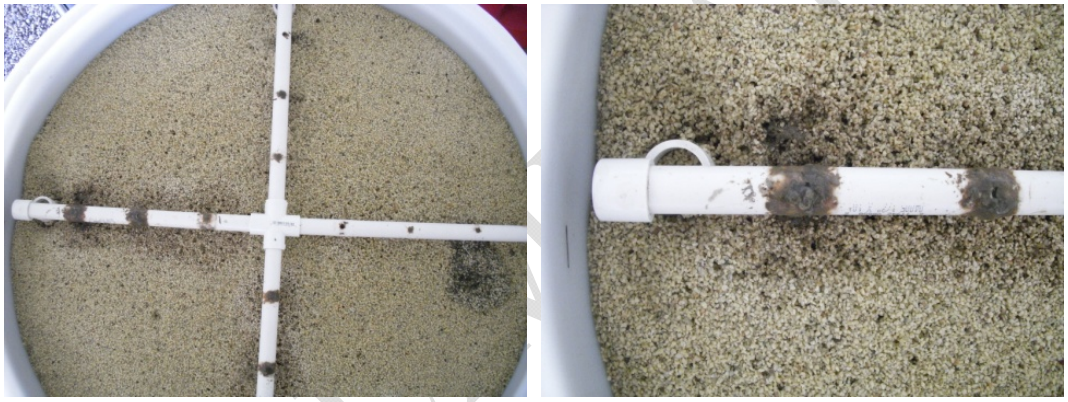


Figure A.4
UNSAT-CL4 before Cleaning 8/4/10

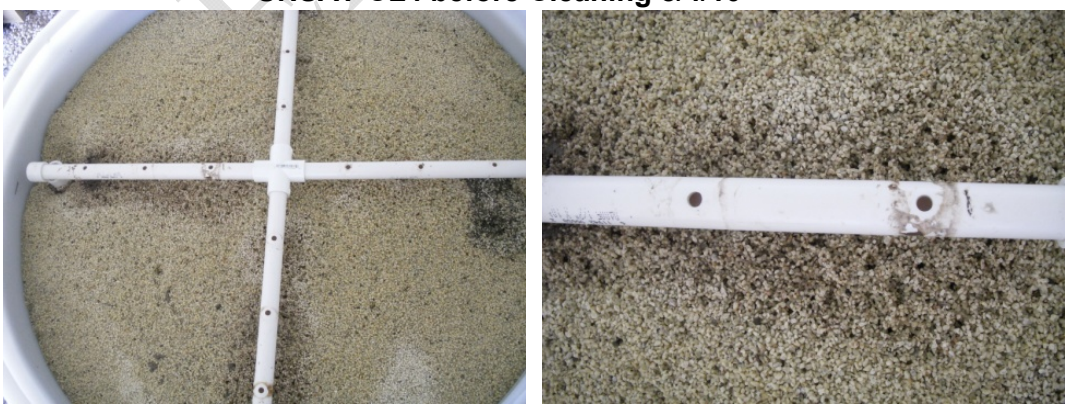


Figure A.5
UNSAT-CL4 after Cleaning 8/4/10

Figure A.6
Unclogging UNSAT-LS4 Influent Pipe 9/10/10

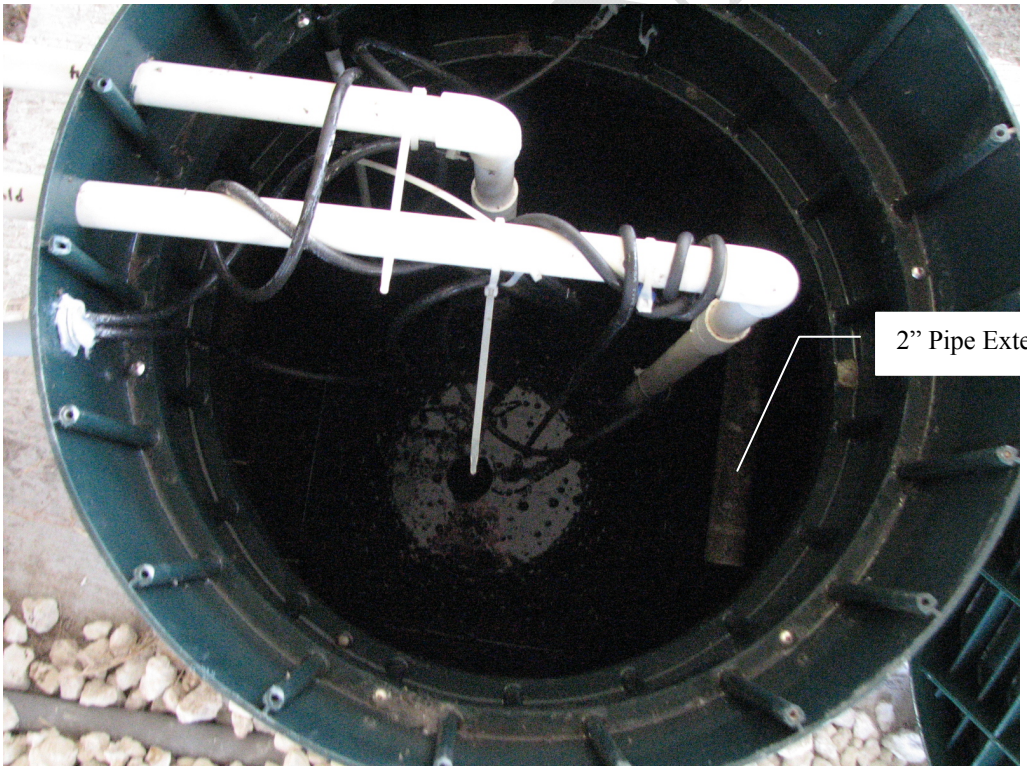


Figure A.7
2” Pipe Extension into PNRS II Tank 1 Pump Chamber 10/8/10

Figure A.8
UNSAT-IS3 and UNSAT-IS4 Columns 10/14/10

Appendix B: PLC Data Tables

Table B.1
Summary of PLC Recorded Daily Flows
(5/19/11 – 9/14/11)

Date Range		Average Recorded Flow (gpd)	Std. Dev.	MIN (gpd)	MAX (gpd)	Target Flow (gpd)	Relative Error[1] (%)
Before Hydraulic Loading Rate Increase							
5/19/11-6/28/11	Pump 4 to Hydro 1	72	8.1	36	79	73.7	-2.7%
5/19/11-5/30/11	Pump 14 to Hydro 2	61	0.7	60	62	58.9	3.5%
	Pump 6 to Recirc. System 1	43	0.5	43	44	44.2	-1.9%
	Pump 7 to Recirc. System 2	45	0.7	43	45	44.2	1.1%
	Pump 8 to Recirc. System 3	43	0.5	43	44	44.2	-1.9%
	Pump 9 to Recirc. System 4	44	0.5	43	44	44.2	-0.9%
Following Hydraulic Loading Rate Increase							
6/29/11-9/14/11	Pump 4 to Hydro 1	127	2.7	123	132	122.7	3.7%
5/31/11-9/14/11	Pump 14 to Hydro 2	114	33.6	0	141	117.8	-3.5%
	Pump 6 to Recirc. System 1	142	1.2	137	144	147.2	-3.6
	Pump 7 to Recirc. System 2	148	1.1	142	150	147.2	0.6
	Pump 8 to Recirc. System 3	146	0.8	141	147	147.2	-0.9
	Pump 9 to Recirc. System 4	140	18.7	17	145	147.2	-4.9

[1]Relative Error = (Recorded Flow – Target Flow)/ Target Flow *100

Table B.2
Summary of PLC Recorded Daily Runtimes
(5/19/11 – 9/14/11)

Date Range		Average Recorded Daily Runtime (min/day)	Std. Dev.	MIN (min)	MAX (min)	Target Daily Runtime (min)	Relative Error[1] (%)
Before Hydraulic Loading Rate Increase							
5/19/11-6/28/11	Pump 4 to Hydro 1	17.6	0.5	17	18	17.2	2.2
5/19/11-5/30/11	Pump 14 to Hydro 2	12.3	0.9	12	15	11.6	5.6
	Pump 6 to Recirc. System 1	6.4	0.5	6	7	6	6.9
	Pump 7 to Recirc. System 2	6.4	0.5	6	7	6	6.9
	Pump 8 to Recirc. System 3	6.4	0.5	6	7	6	6.9
	Pump 9 to Recirc. System 4	6.3	0.5	6	7	6	5.6
Following Hydraulic Loading Rate Increase							
6/29/11-9/14/11	Pump 4 to Hydro 1	31.7	1.1	31	40	31.2	1.57
5/31/11-9/14/11	Pump 14 to Hydro 2	27.7	1	26	36	27.2	1.7
	Pump 6 to Recirc. System 1	21.2	0.7	20	27	20.8	2.1
	Pump 7 to Recirc. System 2	21.2	0.8	20	28	20.8	2.1
	Pump 8 to Recirc. System 3	21.6	0.8	21	28	21.2	2.1
	Pump 9 to Recirc. System 4	21.2	0.7	20	27	20.8	2.1

[1]Relative Error = (Recorded Runtime – Target Runtime)/ Target Runtime *100
[2]Pump 4 Runtime was increased to increase UNSAT-PS1 STE influent volume to target level

Appendix C: Flow Test Results

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Table C.1
Flow Test Results

Group (Figure 1)	Biofilter/Flow	Target Input			Measured Input		Recycle Ratio		
		Target Input Volume	Dose/day	Target Input Volume	Measured Input Volume	Relative Error (%)	Target Recycle Ratio (RR)	Calculated Recycle Ratio (RR)	Relative Error (%)
		(mL/day)	(Dose/day)	(mL/dose)	(mL/dose)	(Measured Input -Target Input) / Target Input * 100	Volume Recycle / Volume STE	Volume Recycle / Volume STE	Measured RR - Target RR / Measured RR * 100
1	**Stage 1 Single Pass Biofilters (Hydrosplitter 1)**								
	Date				9/16/11 2:00 PM				
	UNSAT-CL5	92,760	24	3,865	4,180	8.2%			
	UNSAT-CL3				3,460	-10.5%			
	UNSAT-CL1				3,160	-18.2%			
	UNSAT-EC3				4,350	12.5%			
	UNSAT-EC1				3,480	-10.0%			
	Mean				3,726	-3.6%			
	Stage 2 Single Pass Upflow Biofilters								
	Date				9/16/2011 1:00 2:00 pm				
	DENIT-LS4	92,760	24	3,865	3,480	-10.0%			
	DENIT-LS2				4,525	17.1%			
	DENIT-SU3				4,800	24.2%			
	DENIT-LS3				3,580	-7.4%			
	DENIT-SU4				4,060	5.0%			
	Mean				4,089	5.8%			
2	**Stage 1 Recirculating Biofilters (Hydrosplitter 2)**								
	Date				9/16/2011 STE 9:30 am				
	RC1 : UNSAT-SA2	111,312	24	4,638	5,040	8.7%			
	RC2 : UNSAT-EC4				4,930	6.3%			
	RC3 : UNSAT-CL2				4,660	0.5%			
	RC4 : UNSAT-CL4				4,870	5.0%			
	Mean				4,875	5.1%			
	Stage 1 Recirculating Biofilters (Recycle)				Flowmeter R 9/16/2011				
	RC1 : UNSAT-SA2	556,560	24	23,190	22,237	-4.1%	5:1	4.41	-13.3%
	RC2 : UNSAT-EC4				23,183	0.0%		4.70	-6.3%
	RC3 : UNSAT-CL2				23,025	-0.7%		4.94	-1.2%
	RC4 : UNSAT-CL4				22,710	-2.1%		4.66	-7.2%
	Mean				22,789	-1.7%		4.68	-7.0%
	Stage 1 Recirculating Biofilters (Hydrosplitter + Recycle)								
	RC1 : UNSAT-SA2	667,872	24	27,828	27,277	-2.0%			
	RC2 : UNSAT-EC4				28,113	1.0%			
	RC3 : UNSAT-CL2				27,685	-0.5%			
	RC4 : UNSAT-CL4				27,580	-0.9%			
	Mean				27,664	-0.6%			
3	**Horizontal Denitrification Biofilters**								
	Date				9/16/11 3:15 PM				
	DENIT-SU1	14,818	24	617.4	635	2.9%			
	DENIT-SU2				630	2.0%			
	DENIT-GL1				580	-6.1%			
	DENIT-LS1				601	-2.7%			
	Mean				612	-1.0%			
4	**In-Situ Simulators**								
	Date				9/16/11 1:00 PM				
	UNSAT-IS1 (STE)	20,160	24	840	540	-35.7%			
	UNSAT-IS2 (Nitrified STE)	20,640	24	860	302	-64.9%			
					9/16/11 2:00 PM				
	UNSAT-IS3 (STE)	893	24	37	36	-3.2%			
	UNSAT-IS4 (Nitrified STE)				39	4.8%			

Notes: Yellow-shaded cells are measured values; grey-shaded cells are calculated values

Appendix D: Laboratory Report

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

October 5, 2011
Work Order: 1108118

Laboratory Report

Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**PNRS II STE-Tank 1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-01**						
Date/Time Collected		**09/15/11 11:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 11:50	SDH
Water Temperature	°C	28.4	DEP FT1400	0.1	0.1		09/15/11 11:50	SDH
Specific conductance	umhos/cm	820	DEP FT1200	0.1	0.1		09/15/11 11:50	SDH
Dissolved Oxygen	mg/L	4.0	DEP FT1500	0.1	0.1		09/15/11 11:50	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	1.6	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	22	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	35	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	97	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Sulfate	mg/L	31	EPA 300.0	0.60	0.20		09/15/11 23:39	MEJ
Sulfide	mg/L	5.6	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	240	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	26	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	15	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	8,400	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**PNRS II STE-Tank 1-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-02**						
Date/Time Collected		**09/15/11 11:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 11:55	SDH
Water Temperature	°C	28.4	DEP FT1400	0.1	0.1		09/15/11 11:55	SDH
Specific conductance	umhos/cm	820	DEP FT1200	0.1	0.1		09/15/11 11:55	SDH
Dissolved Oxygen	mg/L	4.0	DEP FT1500	0.1	0.1		09/15/11 11:55	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	1.5	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	23	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	30	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	93	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ

FDOH Laboratory No.E84129
NELAP Accredited

Francis I. Daniels, Laboratory Director
Leslie C. Boardman, Q.A. Manager

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Tampa, FL 33619

October 5, 2011
Work Order: 1108118

Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PNRS II STE-Tank 1-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-02**						
Date/Time Collected		**09/15/11 11:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Sulfate	mg/L	32	EPA 300.0	0.60	0.20		09/15/11 23:39	MEJ
Sulfide	mg/L	5.5	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	250	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	25	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	20	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	8,900	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**UNSAT-EC1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-03**						
Date/Time Collected		**09/15/11 11:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/15/11 11:45	SDH
Water Temperature	°C	28.8	DEP FT1400	0.1	0.1		09/15/11 11:45	SDH
Specific conductance	umhos/cm	810	DEP FT1200	0.1	0.1		09/15/11 11:45	SDH
Dissolved Oxygen	mg/L	3.9	DEP FT1500	0.1	0.1		09/15/11 11:45	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.54	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	22	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.10	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Sulfate	mg/L	55	EPA 300.0	0.60	0.20		09/15/11 23:39	MEJ
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	3.8	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	690	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ

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Tampa, FL 33619

October 5, 2011
Work Order: 1108118

Laboratory Report

Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**UNSAT-EC3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-04**						
Date/Time Collected		**09/15/11 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		09/15/11 11:40	SDH
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		09/15/11 11:40	SDH
Specific conductance	umhos/cm	826	DEP FT1200	0.1	0.1		09/15/11 11:40	SDH
Dissolved Oxygen	mg/L	5.6	DEP FT1500	0.1	0.1		09/15/11 11:40	SDH
Inorganics								
Ammonia as N	mg/L	0.023	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	22	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	160	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	1	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Metals								
Sodium	mg/L	38	EPA 200.7	0.050	0.010	09/20/11 08:41	09/22/11 14:27	VWC
Microbiology								
Fecal Coliforms	CFU/100 ml	3	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**UNSAT-CL1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-05**						
Date/Time Collected		**09/15/11 11:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 11:35	SDH
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		09/15/11 11:35	SDH
Specific conductance	umhos/cm	825	DEP FT1200	0.1	0.1		09/15/11 11:35	SDH
Dissolved Oxygen	mg/L	6.6	DEP FT1500	0.1	0.1		09/15/11 11:35	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.016	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	24	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Sulfate	mg/L	53	EPA 300.0	0.60	0.20		09/15/11 23:39	MEJ

FDOH Laboratory No.E84129
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Leslie C. Boardman, Q.A. Manager

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October 5, 2011
Work Order: 1108118

Laboratory Report

Project Name		PNRS II						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**UNSAT-CL1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-05**						
Date/Time Collected		**09/15/11 11:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	40	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**UNSAT-CL3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-06**						
Date/Time Collected		**09/15/11 11:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.3	DEP FT1100	0.1	0.1		09/15/11 11:30	SDH
Water Temperature	°C	28.2	DEP FT1400	0.1	0.1		09/15/11 11:30	SDH
Specific conductance	umhos/cm	903	DEP FT1200	0.1	0.1		09/15/11 11:30	SDH
Dissolved Oxygen	mg/L	6.4	DEP FT1500	0.1	0.1		09/15/11 11:30	SDH
Inorganics								
Ammonia as N	mg/L	0.020	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	24	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	190	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	3	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	120	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**UNSAT-CL5**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-07**						
Date/Time Collected		**09/15/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								

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Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**UNSAT-CL5**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-07**						
Date/Time Collected		**09/15/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
pH	SU	7.5	DEP FT1100	0.1	0.1		09/15/11 11:20	SDH
Water Temperature	°C	28.8	DEP FT1400	0.1	0.1		09/15/11 11:20	SDH
Specific conductance	umhos/cm	817	DEP FT1200	0.1	0.1		09/15/11 11:20	SDH
Dissolved Oxygen	mg/L	6.7	DEP FT1500	0.1	0.1		09/15/11 11:20	SDH
Inorganics								
Ammonia as N	mg/L	0.018	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	25	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	410	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**DENIT-SU4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-08**						
Date/Time Collected		**09/15/11 10:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/15/11 10:00	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		09/15/11 10:00	SDH
Specific conductance	umhos/cm	1,004	DEP FT1200	0.1	0.1		09/15/11 10:00	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		09/15/11 10:00	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.49	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	1.5	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	8	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Sulfate	mg/L	260	EPA 300.0	0.60	0.20		09/21/11 13:18	MEJ
Sulfide	mg/L	1.4	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	2.9	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD

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October 5, 2011
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Laboratory Report

Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**DENIT-SU4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-08**						
Date/Time Collected		**09/15/11 10:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Total Suspended Solids	mg/L	3	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	740	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-LS3-REV**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-09**						
Date/Time Collected		**09/15/11 09:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 09:50	SDH
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		09/15/11 09:50	SDH
Specific conductance	umhos/cm	739	DEP FT1200	0.1	0.1		09/15/11 09:50	SDH
Dissolved Oxygen	mg/L	2.3	DEP FT1500	0.1	0.1		09/15/11 09:50	SDH
Inorganics								
Ammonia as N	mg/L	0.033	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	9.1	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.51	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	220	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	4	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	3	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**DENIT-LS3-REV-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-10**						
Date/Time Collected		**09/15/11 09:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 09:55	SDH
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		09/15/11 09:55	SDH
Specific conductance	umhos/cm	739	DEP FT1200	0.1	0.1		09/15/11 09:55	SDH

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Laboratory Report

Project Name		PNRS II						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**DENIT-LS3-REV-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-10**						
Date/Time Collected		**09/15/11 09:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Dissolved Oxygen	mg/L	2.3	DEP FT1500	0.1	0.1		09/15/11 09:55	SDH
Inorganics								
Ammonia as N	mg/L	0.030	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	8.2	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.46	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	210	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	3	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	2	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**DENIT-SU3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-11**						
Date/Time Collected		**09/15/11 09:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 09:40	SDH
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		09/15/11 09:40	SDH
Specific conductance	umhos/cm	1,126	DEP FT1200	0.1	0.1		09/15/11 09:40	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		09/15/11 09:40	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.26	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.55	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	6	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Sulfate	mg/L	320	EPA 300.0	0.60	0.20		09/21/11 13:18	MEJ
Sulfide	mg/L	0.98	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	150	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	30	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ

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Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-SU3-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-12**						
Date/Time Collected		**09/15/11 09:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 13:20**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 09:45	SDH
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		09/15/11 09:45	SDH
Specific conductance	umhos/cm	1,126	DEP FT1200	0.1	0.1		09/15/11 09:45	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		09/15/11 09:45	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.21	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.51	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	6	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	0.24	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Sulfate	mg/L	330	EPA 300.0	0.60	0.20		09/21/11 13:18	MEJ
Sulfide	mg/L	0.78	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	6	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	20	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-LS2-REV**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-13**						
Date/Time Collected		**09/15/11 09:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.5	DEP FT1100	0.1	0.1		09/15/11 09:35	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		09/15/11 09:35	SDH
Specific conductance	umhos/cm	862	DEP FT1200	0.1	0.1		09/15/11 09:35	SDH
Dissolved Oxygen	mg/L	3.1	DEP FT1500	0.1	0.1		09/15/11 09:35	SDH
Inorganics								
Ammonia as N	mg/L	0.039	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	20	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Nitrite (as N)	mg/L	0.47	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Total Alkalinity	mg/L	220	SM 2320B	8.0	2.0		09/19/11 11:00	MMF

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NELAP Accredited

Francis I. Daniels, Laboratory Director
Leslie C. Boardman, Q.A. Manager

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Laboratory Report

Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**DENIT-LS2-REV**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-13**						
Date/Time Collected		**09/15/11 09:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	09/22/11 10:43	09/26/11 14:08	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	4	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-LS4-REV**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-14**						
Date/Time Collected		**09/15/11 09:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.7	DEP FT1100	0.1	0.1		09/15/11 09:25	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/15/11 09:25	SDH
Specific conductance	umhos/cm	809	DEP FT1200	0.1	0.1		09/15/11 09:25	SDH
Dissolved Oxygen	mg/L	3.3	DEP FT1500	0.1	0.1		09/15/11 09:25	SDH
Inorganics								
Ammonia as N	mg/L	0.023	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	16	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Nitrite (as N)	mg/L	0.39	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Total Alkalinity	mg/L	200	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	16	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-LS4-REV-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-15**						
Date/Time Collected		**09/15/11 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.7	DEP FT1100	0.1	0.1		09/15/11 09:30	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/15/11 09:30	SDH

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Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-LS4-REV-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-15**						
Date/Time Collected		**09/15/11 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Specific conductance	umhos/cm	809	DEP FT1200	0.1	0.1		09/15/11 09:30	SDH
Dissolved Oxygen	mg/L	3.3	DEP FT1500	0.1	0.1		09/15/11 09:30	SDH
Inorganics								
Ammonia as N	mg/L	0.021	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	16	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Nitrite (as N)	mg/L	0.51	EPA 300.0	0.04	0.01		09/15/11 12:30	MEJ
Total Alkalinity	mg/L	200	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	14	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**RC1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-16**						
Date/Time Collected		**09/15/11 10:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.3	DEP FT1100	0.1	0.1		09/15/11 10:05	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1	09/15/11 10:05	09/15/15 10:05	SDH
Specific conductance	umhos/cm	706	DEP FT1200	0.1	0.1		09/15/11 10:05	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		09/15/11 10:05	SDH
Inorganics								
Ammonia as N	mg/L	1.3	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	4	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	15 I	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	14	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	150	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	3	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	4,300	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ

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Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**RC2**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-17**						
Date/Time Collected		**09/15/11 10:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/15/11 10:10	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/15/11 10:10	SDH
Specific conductance	umhos/cm	696	DEP FT1200	0.1	0.1		09/15/11 10:10	SDH
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		09/15/11 10:10	SDH
Inorganics								
Ammonia as N	mg/L	3.0	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	4	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	5.3	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	4,600	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**RC3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-18**						
Date/Time Collected		**09/15/11 10:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.3	DEP FT1100	0.1	0.1		09/15/11 10:15	SDH
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		09/15/11 10:15	SDH
Specific conductance	umhos/cm	713	DEP FT1200	0.1	0.1		09/15/11 10:15	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		09/15/11 10:15	SDH
Inorganics								
Ammonia as N	mg/L	3.0	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	5	SM 5210B	2	2	09/16/11 09:00	09/21/11 17:00	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	13	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.35	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								

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Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**RC3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-18**						
Date/Time Collected		**09/15/11 10:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Fecal Coliforms	CFU/100 ml	3,600	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**RC4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-19**						
Date/Time Collected		**09/15/11 10:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 10:20	SDH
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		09/15/11 10:20	SDH
Specific conductance	umhos/cm	750	DEP FT1200	0.1	0.1		09/15/11 10:20	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		09/15/11 10:20	SDH
Inorganics								
Ammonia as N	mg/L	2.6	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	4	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	9.6	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	180	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	4,900	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**UNSAT-CL4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-20**						
Date/Time Collected		**09/15/11 08:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 08:55	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/15/11 08:55	SDH
Specific conductance	umhos/cm	767	DEP FT1200	0.1	0.1		09/15/11 08:55	SDH
Dissolved Oxygen	mg/L	7.2	DEP FT1500	0.1	0.1		09/15/11 08:55	SDH
Inorganics								

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Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**UNSAT-CL4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-20**						
Date/Time Collected		**09/15/11 08:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Ammonia as N	mg/L	0.037	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	14	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	170	SM 2320B	8.0	2.0		09/19/11 11:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	5	SM 2540D	1	1	09/19/11 13:35	09/20/11 13:56	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	5	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**UNSAT-CL2**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-21**						
Date/Time Collected		**09/15/11 09:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/15/11 09:10	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		09/15/11 09:10	SDH
Specific conductance	umhos/cm	697	DEP FT1200	0.1	0.1		09/15/11 09:10	SDH
Dissolved Oxygen	mg/L	6.2	DEP FT1500	0.1	0.1		09/15/11 09:10	SDH
Inorganics								
Ammonia as N	mg/L	0.023	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	17	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	10	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	760	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ

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Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**UNSAT-EC4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-22**						
Date/Time Collected		**09/15/11 09:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/15/11 09:20	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		09/15/11 09:20	SDH
Specific conductance	umhos/cm	693	DEP FT1200	0.1	0.1		09/15/11 09:20	SDH
Dissolved Oxygen	mg/L	7.1	DEP FT1500	0.1	0.1		09/15/11 09:20	SDH
Inorganics								
Ammonia as N	mg/L	0.021	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	17	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	50	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**UNSAT-SA2**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-23**						
Date/Time Collected		**09/15/11 09:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/15/11 09:00	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		09/15/11 09:00	SDH
Specific conductance	umhos/cm	687	DEP FT1200	0.1	0.1		09/15/11 09:00	SDH
Dissolved Oxygen	mg/L	6.7	DEP FT1500	0.1	0.1		09/15/11 09:00	SDH
Inorganics								
Ammonia as N	mg/L	0.017	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	18	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								

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Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**UNSAT-SA2**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-23**						
Date/Time Collected		**09/15/11 09:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Fecal Coliforms	CFU/100 ml	70	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DFT**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-24**						
Date/Time Collected		**09/15/11 08:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 08:20	SDH
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		09/15/11 08:20	SDH
Specific conductance	umhos/cm	711	DEP FT1200	0.1	0.1		09/15/11 08:20	SDH
Dissolved Oxygen	mg/L	6.8	DEP FT1500	0.1	0.1		09/15/11 08:20	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.016	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	16	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Sulfate	mg/L	58	EPA 300.0	0.60	0.20		09/15/11 23:39	MEJ
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	66	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DFT-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-25**						
Date/Time Collected		**09/15/11 08:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		09/15/11 08:25	SDH
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		09/15/11 08:25	SDH

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Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DFT-D**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-25**						
Date/Time Collected		**09/15/11 08:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Specific conductance	umhos/cm	711	DEP FT1200	0.1	0.1		09/15/11 08:25	SDH
Dissolved Oxygen	mg/L	6.8	DEP FT1500	0.1	0.1		09/15/11 08:25	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.06	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.034	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	16	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Sulfate	mg/L	58	EPA 300.0	0.60	0.20		09/15/11 23:39	MEJ
Sulfide	mg/L	0.20 I	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	71	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-SU1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-26**						
Date/Time Collected		**09/15/11 07:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/15/11 07:45	SDH
Water Temperature	°C	22.0	DEP FT1400	0.1	0.1		09/15/11 07:45	SDH
Specific conductance	umhos/cm	1,009	DEP FT1200	0.1	0.1		09/15/11 07:45	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		09/15/11 07:45	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	14	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	1.2	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	41	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	89	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	0.24	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 23:39	MEJ
Sulfate	mg/L	200	EPA 300.0	0.60	0.20		09/21/11 13:18	MEJ
Sulfide	mg/L	30	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	170	SM 2320B	8.0	2.0		09/21/11 09:05	JAG

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-SU1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-26**						
Date/Time Collected		**09/15/11 07:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	9	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-SU2**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-27**						
Date/Time Collected		**09/15/11 07:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/15/11 07:50	SDH
Water Temperature	°C	22.5	DEP FT1400	0.1	0.1		09/15/11 07:50	SDH
Specific conductance	umhos/cm	961	DEP FT1200	0.1	0.1		09/15/11 07:50	SDH
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		09/15/11 07:50	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	11	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	2.2	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	27	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	40	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Sulfate	mg/L	210	EPA 300.0	0.60	0.20		09/21/11 13:18	MEJ
Sulfide	mg/L	24	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	170	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	8.0	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	10	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-LS1-REV**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-28**						
Date/Time Collected		**09/15/11 07:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						

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Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**DENIT-LS1-REV**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-28**						
Date/Time Collected		**09/15/11 07:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/15/11 07:55	SDH
Water Temperature	°C	22.2	DEP FT1400	0.1	0.1		09/15/11 07:55	SDH
Specific conductance	umhos/cm	644	DEP FT1200	0.1	0.1		09/15/11 07:55	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		09/15/11 07:55	SDH
Inorganics								
Ammonia as N	mg/L	0.020	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	9	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Total Alkalinity	mg/L	210	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	0.38	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**DENIT-GL1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-29**						
Date/Time Collected		**09/15/11 08:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		09/15/11 08:00	SDH
Water Temperature	°C	22.5	DEP FT1400	0.1	0.1		09/15/11 08:00	SDH
Specific conductance	umhos/cm	794	DEP FT1200	0.1	0.1		09/15/11 08:00	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		09/15/11 08:00	SDH
Inorganics								
Ammonia as N	mg/L	0.27	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	13	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Total Alkalinity	mg/L	330	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	0.70	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	5	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								

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Work Order: 1108118

Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-GL1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-29**						
Date/Time Collected		**09/15/11 08:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 11:50**						
Fecal Coliforms	CFU/100 ml	140	SM 9222D	1	1	09/15/11 12:27	09/16/11 13:30	MEJ
Sample Description		**UNSAT-IS1**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-31**						
Date/Time Collected		**09/16/11 12:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 12:05**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		09/16/11 12:05	SDH
Water Temperature	°C	13.4	DEP FT1400	0.1	0.1		09/16/11 12:05	SDH
Specific conductance	umhos/cm	831	DEP FT1200	0.1	0.1		09/16/11 12:05	SDH
Dissolved Oxygen	mg/L	9.5	DEP FT1500	0.1	0.1		09/16/11 12:05	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.70	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	8.0	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	6	SM 5210B	2	2	09/18/11 09:28	09/23/11 09:00	MEJ
Chemical Oxygen Demand	mg/L	44	EPA 410.4	25	10		09/19/11 11:20	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	53	EPA 300.0	0.60	0.20		09/17/11 10:40	MEJ
Sulfide	mg/L	1.2	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	280	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	21	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	3	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	42	SM 9222D	1	1	09/16/11 16:27	09/17/11 13:30	MEJ
Sample Description		**UNSAT-IS2-SP**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-32**						
Date/Time Collected		**09/16/11 11:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		09/16/11 11:55	SDH
Water Temperature	°C	29.3	DEP FT1400	0.1	0.1		09/16/11 11:55	SDH

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Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**UNSAT-IS2-SP**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-32**						
Date/Time Collected		**09/16/11 11:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Specific conductance	umhos/cm	667	DEP FT1200	0.1	0.1		09/16/11 11:55	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		09/16/11 11:55	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	1.5	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.28	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	7	SM 5210B	2	2	09/18/11 09:28	09/23/11 09:00	MEJ
Chemical Oxygen Demand	mg/L	71	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	72	EPA 300.0	0.60	0.20		09/17/11 10:40	MEJ
Sulfide	mg/L	1.8	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	09/22/11 10:47	09/26/11 14:14	SMD
Total Suspended Solids	mg/L	4	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/16/11 16:27	09/17/11 13:30	MEJ
Sample Description		**UNSAT-IS2**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-33**						
Date/Time Collected		**09/16/11 12:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/16/11 12:10	SDH
Water Temperature	°C	10.1	DEP FT1400	0.1	0.1		09/16/11 12:10	SDH
Specific conductance	umhos/cm	865	DEP FT1200	0.1	0.1		09/16/11 12:10	SDH
Dissolved Oxygen	mg/L	7.7	DEP FT1500	0.1	0.1		09/16/11 12:10	SDH
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.86	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.39	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	9	SM 5210B	2	2	09/18/11 09:28	09/23/11 09:00	MEJ
Chemical Oxygen Demand	mg/L	130	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	120	EPA 300.0	0.60	0.20		09/21/11 13:18	MEJ
Sulfide	mg/L	1.8	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:19	JAG
Total Alkalinity	mg/L	240	SM 2320B	8.0	2.0		09/21/11 09:05	JAG

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Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**UNSAT-IS2**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-33**						
Date/Time Collected		**09/16/11 12:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	09/22/11 14:00	09/27/11 17:39	SMD
Total Suspended Solids	mg/L	4	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/16/11 16:27	09/17/11 13:30	MEJ
Sample Description		**Field Blank**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-34**						
Date/Time Collected		**09/15/11 11:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 16:00**						
Field Parameters								
pH	SU	8.2	DEP FT1100	0.1	0.1		09/15/11 11:10	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		09/15/11 11:10	SDH
Specific conductance	umhos/cm	36	DEP FT1200	0.1	0.1		09/15/11 11:10	SDH
Dissolved Oxygen	mg/L	7.9	DEP FT1500	0.1	0.1		09/15/11 11:10	SDH
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	09/22/11 14:00	09/27/11 17:39	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ
Sample Description		**Equipment Blank**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-35**						
Date/Time Collected		**09/15/11 11:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 16:00**						
Field Parameters								
pH	SU	7.8	DEP FT1100	0.1	0.1		09/15/11 11:00	SDH
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		09/15/11 11:00	SDH

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110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

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Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**Equipment Blank**						
Matrix		**Wastewater**						
SAL Sample Number		**1108118-35**						
Date/Time Collected		**09/15/11 11:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/15/11 16:00**						
Specific conductance	umhos/cm	32	DEP FT1200	0.1	0.1		09/15/11 11:00	SDH
Dissolved Oxygen	mg/L	7.9	DEP FT1500	0.1	0.1		09/15/11 11:00	SDH
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		09/23/11 10:47	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/16/11 15:46	09/22/11 11:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	09/22/11 14:00	09/27/11 17:39	SMD
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/15/11 14:07	09/16/11 14:00	MEJ

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11503 - Ion Chromatography 300.0 Prep										
Blank (BI11503-BLK1)					Prepared & Analyzed: 09/15/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11503-BS1)					Prepared & Analyzed: 09/15/11					
Nitrite (as N)	1.30	0.04	0.01	mg/L	1.4		93	85-115		
Nitrate (as N)	1.57	0.04	0.01	mg/L	1.7		92	85-115		
LCS Dup (BI11503-BSD1)					Prepared & Analyzed: 09/15/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115	2	200
Nitrate (as N)	1.56	0.04	0.01	mg/L	1.7		92	85-115	0.6	200
Matrix Spike (BI11503-MS1)		**Source: 1107980-01**			Prepared & Analyzed: 09/15/11					
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4		100	85-115		
Nitrate (as N)	1.84	0.04	0.01	mg/L	1.7	0.246	94	85-115		
Matrix Spike (BI11503-MS2)		**Source: 1108257-02**			Prepared & Analyzed: 09/15/11					
Nitrite (as N)	1,470	0.04	0.01	mg/L	1400	ND	105	85-115		
Nitrate (as N)	1,620	0.04	0.01	mg/L	1700	ND	95	85-115		
Batch BI11525 - Ion Chromatography 300.0 Prep										
Blank (BI11525-BLK1)					Prepared & Analyzed: 09/15/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11525-BS1)					Prepared & Analyzed: 09/15/11					
Sulfate	8.29	0.60	0.20	mg/L	9.0		92	85-115		
Nitrate (as N)	1.57	0.04	0.01	mg/L	1.7		92	85-115		
Nitrite (as N)	1.29	0.04	0.01	mg/L	1.4		92	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11525 - Ion Chromatography 300.0 Prep										
LCS Dup (BI11525-BSD1)					Prepared & Analyzed: 09/15/11					
Nitrate (as N)	1.59	0.04	0.01	mg/L	1.7		94	85-115	1	200
Nitrite (as N)	1.32	0.04	0.01	mg/L	1.4		94	85-115	2	200
Sulfate	8.28	0.60	0.20	mg/L	9.0		92	85-115	0.1	200
Matrix Spike (BI11525-MS1)		**Source: 1108118-16**			Prepared & Analyzed: 09/15/11					
Nitrate (as N)	15.4	0.04	0.01	mg/L	1.7	13.6	106	85-115		
Sulfate	68.1 +O	0.60	0.20	mg/L	9.0	61.3	76	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4	ND	102	85-115		
Matrix Spike (BI11525-MS2)		**Source: 1108118-26**			Prepared & Analyzed: 09/15/11					
Sulfate	155 +O	0.60	0.20	mg/L	9.0	200	NR	85-115		
Nitrate (as N)	1.76	0.04	0.01	mg/L	1.7	0.241	89	85-115		
Nitrite (as N)	1.39	0.04	0.01	mg/L	1.4	ND	99	85-115		
Batch BI11603 - Ion Chromatography 300.0 Prep										
Blank (BI11603-BLK1)					Prepared & Analyzed: 09/16/11					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11603-BS1)					Prepared & Analyzed: 09/16/11					
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7		95	85-115		
Nitrite (as N)	1.30	0.04	0.01	mg/L	1.4		93	85-115		
LCS Dup (BI11603-BSD1)					Prepared & Analyzed: 09/16/11					
Nitrate (as N)	1.63	0.04	0.01	mg/L	1.7		96	85-115	0.6	200
Nitrite (as N)	1.30	0.04	0.01	mg/L	1.4		93	85-115	0	200

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11603 - Ion Chromatography 300.0 Prep										
Matrix Spike (BI11603-MS1)		**Source: 1108350-01**			Prepared & Analyzed: 09/16/11					
Nitrite (as N)	1.37	0.04	0.01	mg/L	1.4	ND	98	85-115		
Nitrate (as N)	1.96	0.04	0.01	mg/L	1.7	0.511	85	85-115		
Matrix Spike (BI11603-MS2)		**Source: 1107996-05**			Prepared & Analyzed: 09/16/11					
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4	ND	102	85-115		
Nitrate (as N)	4.87	0.04	0.01	mg/L	1.7	3.21	98	85-115		
Batch BI11614 - BOD										
Blank (BI11614-BLK1)					Prepared: 09/16/11 Analyzed: 09/21/11					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BI11614-BS1)					Prepared: 09/16/11 Analyzed: 09/21/11					
Carbonaceous BOD	196	2	2	mg/L	200		98	85-115		
LCS Dup (BI11614-BSD1)					Prepared: 09/16/11 Analyzed: 09/21/11					
Carbonaceous BOD	193	2	2	mg/L	200		97	85-115	1	200
Duplicate (BI11614-DUP1)		**Source: 1107983-01**			Prepared: 09/16/11 Analyzed: 09/21/11					
Carbonaceous BOD	85	2	2	mg/L		95			11	25
Batch BI11627 - BOD										
Blank (BI11627-BLK1)					Prepared: 09/16/11 Analyzed: 09/22/11					
Carbonaceous BOD	2 U	2	2	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11627 - BOD										
LCS (BI11627-BS1)					Prepared: 09/16/11 Analyzed: 09/22/11					
Carbonaceous BOD	205	2	2	mg/L	200		103	85-115		
LCS Dup (BI11627-BSD1)					Prepared: 09/16/11 Analyzed: 09/22/11					
Carbonaceous BOD	203	2	2	mg/L	200		102	85-115	1	200
Duplicate (BI11627-DUP1)		**Source: 1108154-01**			Prepared: 09/16/11 Analyzed: 09/22/11					
Carbonaceous BOD	170	2	2	mg/L		170			3	25
Batch BI11702 - Ion Chromatography 300.0 Prep										
Blank (BI11702-BLK1)					Prepared & Analyzed: 09/17/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BI11702-BS1)					Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Nitrate (as N)	1.57	0.04	0.01	mg/L	1.7		92	85-115		
Sulfate	8.20	0.60	0.20	mg/L	9.0		91	85-115		
LCS Dup (BI11702-BSD1)					Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115	0	200
Sulfate	8.25	0.60	0.20	mg/L	9.0		92	85-115	0.6	200
Nitrate (as N)	1.60	0.04	0.01	mg/L	1.7		94	85-115	2	200
Matrix Spike (BI11702-MS1)		**Source: 1108119-33**			Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.46	0.04	0.01	mg/L	1.4	ND	104	85-115		
Sulfate	53.0 +O	0.60	0.20	mg/L	9.0	45.4	84	85-115		
Nitrate (as N)	1.85	0.04	0.01	mg/L	1.7	0.286	92	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11702 - Ion Chromatography 300.0 Prep										
Matrix Spike (BI11702-MS2)		**Source: 1108119-43**			Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Sulfate	14.0	0.60	0.20	mg/L	9.0	4.75	103	85-115		
Nitrate (as N)	1.80	0.04	0.01	mg/L	1.7	0.222	93	85-115		
Batch BI11801 - BOD										
Blank (BI11801-BLK1)					Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BI11801-BS1)					Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	176	2	2	mg/L	200		88	85-115		
LCS Dup (BI11801-BSD1)					Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	195	2	2	mg/L	200		98	85-115	11	200
Duplicate (BI11801-DUP1)		**Source: 1107979-01**			Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	2 U	2	2	mg/L		ND				25
Batch BI11911 - alkalinity										
Blank (BI11911-BLK1)					Prepared & Analyzed: 09/19/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BI11911-BS1)					Prepared & Analyzed: 09/19/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11911 - alkalinity										
Matrix Spike (BI11911-MS1)		**Source: 1108118-20**			Prepared & Analyzed: 09/19/11					
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120		
Matrix Spike Dup (BI11911-MSD1)		**Source: 1108118-20**			Prepared & Analyzed: 09/19/11					
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120	0	26
Batch BI11923 - TSS prep										
Blank (BI11923-BLK1)					Prepared: 09/19/11 Analyzed: 09/20/11					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BI11923-BS1)					Prepared: 09/19/11 Analyzed: 09/20/11					
Total Suspended Solids	48.5	1	1	mg/L	50		97	85-115		
Duplicate (BI11923-DUP1)		**Source: 1108118-01**			Prepared: 09/19/11 Analyzed: 09/20/11					
Total Suspended Solids	15.0	1	1	mg/L		15.0			0	30
Duplicate (BI11923-DUP2)		**Source: 1108118-02**			Prepared: 09/19/11 Analyzed: 09/20/11					
Total Suspended Solids	20.0	1	1	mg/L		20.0			0	30
Batch BI11931 - Ion Chromatography 300.0 Prep										
Blank (BI11931-BLK1)					Prepared & Analyzed: 09/19/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11931-BS1)					Prepared & Analyzed: 09/19/11					
Nitrate (as N)	1.60	0.04	0.01	mg/L	1.7		94	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11931 - Ion Chromatography 300.0 Prep										
LCS Dup (BI11931-BSD1)					Prepared & Analyzed: 09/19/11					
Nitrate (as N)	1.61	0.04	0.01	mg/L	1.7		95	85-115	0.6	200
Matrix Spike (BI11931-MS1)		**Source: 1108431-01**			Prepared & Analyzed: 09/19/11					
Nitrate (as N)	18.2 +O	0.04	0.01	mg/L	1.7	15.6	153	85-115		
Matrix Spike (BI11931-MS2)		**Source: 1107976-01**			Prepared & Analyzed: 09/19/11					
Nitrate (as N)	18.2	0.04	0.01	mg/L	17	2.94	90	85-115		
Batch BI11942 - COD prep										
Blank (BI11942-BLK1)					Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BI11942-BS1)					Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BI11942-MS1)		**Source: 1108118-13**			Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	50	25	10	mg/L	50	ND	100	85-115		
Matrix Spike Dup (BI11942-MSD1)		**Source: 1108118-13**			Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	50	25	10	mg/L	50	ND	100	85-115	0	32
Batch BI11943 - COD prep										
Blank (BI11943-BLK1)					Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11943 - COD prep										
LCS (BI11943-BS1)					Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BI11943-MS1)		**Source: 1108118-14**			Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	53	25	10	mg/L	50	ND	106	85-115		
Matrix Spike Dup (BI11943-MSD1)		**Source: 1108118-14**			Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	50	25	10	mg/L	50	ND	100	85-115	6	32
Batch BI12004 - COD prep										
Blank (BI12004-BLK1)					Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BI12004-BS1)					Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	50	25	10	mg/L	50		100	90-110		
Matrix Spike (BI12004-MS1)		**Source: 1107977-01**			Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	69	25	10	mg/L	50	24	90	85-115		
Matrix Spike Dup (BI12004-MSD1)		**Source: 1107977-01**			Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	77	25	10	mg/L	50	24	106	85-115	11	32
Batch BI12007 - TSS prep										
Blank (BI12007-BLK1)					Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	1 U	1	1	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12007 - TSS prep										
LCS (BI12007-BS1)					Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	49.0	1	1	mg/L	50		98	85-115		
Duplicate (BI12007-DUP1)		**Source: 1108351-01**			Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	184	1	1	mg/L		190			3	30
Duplicate (BI12007-DUP2)		**Source: 1108351-05**			Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	1.50	1	1	mg/L		1.50			0	30
Batch BI12013 - Sulfide prep										
Blank (BI12013-BLK1)					Prepared & Analyzed: 09/20/11					
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BI12013-BS1)					Prepared & Analyzed: 09/20/11					
Sulfide	4.68	0.40	0.10	mg/L	5.0		94	85-115		
Matrix Spike (BI12013-MS1)		**Source: 1108117-04**			Prepared & Analyzed: 09/20/11					
Sulfide	5.07	0.40	0.10	mg/L	5.0	ND	101	85-115		
Matrix Spike Dup (BI12013-MSD1)		**Source: 1108117-04**			Prepared & Analyzed: 09/20/11					
Sulfide	5.07	0.40	0.10	mg/L	5.0	ND	101	85-115	0	14
Batch BI12014 - Sulfide prep										
Blank (BI12014-BLK1)					Prepared & Analyzed: 09/20/11					
Sulfide	0.10 U	0.40	0.10	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12014 - Sulfide prep										
LCS (BI12014-BS1)					Prepared & Analyzed: 09/20/11					
Sulfide	4.68	0.40	0.10	mg/L	5.0		94	85-115		
Matrix Spike (BI12014-MS1)		**Source: 1108118-24**			Prepared & Analyzed: 09/20/11					
Sulfide	5.26	0.40	0.10	mg/L	5.0	ND	105	85-115		
Matrix Spike Dup (BI12014-MSD1)		**Source: 1108118-24**			Prepared & Analyzed: 09/20/11					
Sulfide	5.26	0.40	0.10	mg/L	5.0	ND	105	85-115	0	14
Batch BI12105 - Ion Chromatography 300.0 Prep										
Blank (BI12105-BLK1)					Prepared & Analyzed: 09/21/11					
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BI12105-BS1)					Prepared & Analyzed: 09/21/11					
Sulfate	8.34	0.60	0.20	mg/L	9.0		93	85-115		
LCS Dup (BI12105-BSD1)					Prepared & Analyzed: 09/21/11					
Sulfate	8.18	0.60	0.20	mg/L	9.0		91	85-115	2	200
Matrix Spike (BI12105-MS1)		**Source: 1107977-01**			Prepared & Analyzed: 09/21/11					
Sulfate	144	0.60	0.20	mg/L	90	62.1	91	85-115		
Matrix Spike (BI12105-MS2)		**Source: 1107978-01**			Prepared & Analyzed: 09/21/11					
Sulfate	81.9 +O	0.60	0.20	mg/L	9.0	66.8	168	85-115		
Batch BI12128 - alkalinity										
Blank (BI12128-BLK1)					Prepared & Analyzed: 09/21/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12128 - alkalinity										
LCS (BI12128-BS1)					Prepared & Analyzed: 09/21/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BI12128-MS1)		**Source: 1108254-05**			Prepared & Analyzed: 09/21/11					
Total Alkalinity	190	8.0	2.0	mg/L	120	80	86	80-120		
Matrix Spike Dup (BI12128-MSD1)		**Source: 1108254-05**			Prepared & Analyzed: 09/21/11					
Total Alkalinity	190	8.0	2.0	mg/L	120	80	86	80-120	0	26
Batch BI12129 - alkalinity										
Blank (BI12129-BLK1)					Prepared & Analyzed: 09/21/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BI12129-BS1)					Prepared & Analyzed: 09/21/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BI12129-MS1)		**Source: 1108254-06**			Prepared & Analyzed: 09/21/11					
Total Alkalinity	200	8.0	2.0	mg/L	120	63	108	80-120		
Matrix Spike Dup (BI12129-MSD1)		**Source: 1108254-06**			Prepared & Analyzed: 09/21/11					
Total Alkalinity	200	8.0	2.0	mg/L	120	63	108	80-120	0	26
Batch BI12213 - Digestion for TKN by EPA 351.2										
Blank (BI12213-BLK1)					Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12213 - Digestion for TKN by EPA 351.2										
Blank (BI12213-BLK2)					Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BI12213-BS1)					Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	2.34	0.20	0.05	mg/L	2.5		92	90-110		
LCS (BI12213-BS2)					Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	2.33	0.20	0.05	mg/L	2.5		92	90-110		
Matrix Spike (BI12213-MS1)		**Source: 1108027-08**			Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	2.97	0.20	0.05	mg/L	2.5	0.697	90	80-120		
Matrix Spike (BI12213-MS2)		**Source: 1108118-05**			Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	4.43	0.20	0.05	mg/L	2.5	2.01	95	80-120		
Matrix Spike Dup (BI12213-MSD1)		**Source: 1108027-08**			Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	2.83	0.20	0.05	mg/L	2.5	0.697	84	80-120	5	20
Matrix Spike Dup (BI12213-MSD2)		**Source: 1108118-05**			Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	4.60	0.20	0.05	mg/L	2.5	2.01	102	80-120	4	20
Batch BI12215 - Digestion for TKN by EPA 351.2										
Blank (BI12215-BLK1)					Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BI12215-BS1)					Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	2.36	0.20	0.05	mg/L	2.5		93	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12215 - Digestion for TKN by EPA 351.2										
Matrix Spike (BI12215-MS1)		**Source: 1108118-16**			Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	5.54	0.20	0.05	mg/L	2.5	2.53	119	80-120		
Matrix Spike Dup (BI12215-MSD1)		**Source: 1108118-16**			Prepared: 09/22/11 Analyzed: 09/26/11					
Total Kjeldahl Nitrogen	5.29	0.20	0.05	mg/L	2.5	2.53	109	80-120	5	20
Batch BI12232 - Ammonia by SEAL										
Blank (BI12232-BLK1)					Prepared & Analyzed: 09/23/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BI12232-BLK2)					Prepared & Analyzed: 09/23/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BI12232-BS1)					Prepared & Analyzed: 09/23/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		106	90-110		
LCS (BI12232-BS2)					Prepared & Analyzed: 09/23/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50		104	90-110		
Matrix Spike (BI12232-MS1)		**Source: 1108118-13**			Prepared & Analyzed: 09/23/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50	0.039	92	90-110		
Matrix Spike (BI12232-MS2)		**Source: 1108118-21**			Prepared & Analyzed: 09/23/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.023	109	90-110		
Matrix Spike Dup (BI12232-MSD1)		**Source: 1108118-13**			Prepared & Analyzed: 09/23/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50	0.039	93	90-110	1	10

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12232 - Ammonia by SEAL										
Matrix Spike Dup (BI12232-MSD2)		**Source: 1108118-21**			Prepared & Analyzed: 09/23/11					
Ammonia as N	0.59	0.010	0.005	mg/L	0.50	0.023	112	90-110	3	10
Batch BI12236 - Digestion for TKN by EPA 351.2										
Blank (BI12236-BLK1)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BI12236-BLK2)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BI12236-BLK3)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BI12236-BLK4)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	0.0509 I	0.20	0.05	mg/L						
LCS (BI12236-BS1)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.47	0.20	0.05	mg/L	2.5		98	90-110		
LCS (BI12236-BS2)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
LCS (BI12236-BS3)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
LCS (BI12236-BS4)					Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.39	0.20	0.05	mg/L	2.5		94	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12236 - Digestion for TKN by EPA 351.2										
Matrix Spike (BI12236-MS1)		**Source: 1108118-35**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.61	0.20	0.05	mg/L	2.5	ND	103	80-120		
Matrix Spike (BI12236-MS2)		**Source: 1108028-01**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.72	0.20	0.05	mg/L	2.5	ND	107	80-120		
Matrix Spike (BI12236-MS3)		**Source: 1108028-06**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5	ND	99	80-120		
Matrix Spike (BI12236-MS4)		**Source: 1108166-02**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	3.70	0.20	0.05	mg/L	2.5	0.794	115	80-120		
Matrix Spike Dup (BI12236-MSD1)		**Source: 1108118-35**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.53	0.20	0.05	mg/L	2.5	ND	100	80-120	3	20
Matrix Spike Dup (BI12236-MSD2)		**Source: 1108028-01**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.83	0.20	0.05	mg/L	2.5	ND	112	80-120	4	20
Matrix Spike Dup (BI12236-MSD3)		**Source: 1108028-06**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	2.43	0.20	0.05	mg/L	2.5	ND	96	80-120	4	20
Matrix Spike Dup (BI12236-MSD4)		**Source: 1108166-02**			Prepared: 09/22/11 Analyzed: 09/27/11					
Total Kjeldahl Nitrogen	3.55	0.20	0.05	mg/L	2.5	0.794	109	80-120	4	20

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12002 - Metals Preparation for EPA Method 200.7										
Blank (BI12002-BLK1)					Prepared: 09/20/11 Analyzed: 09/22/11					
Sodium	0.058	0.050	0.010	mg/L						
LCS (BI12002-BS1)					Prepared: 09/20/11 Analyzed: 09/22/11					
Sodium	22	0.050	0.010	mg/L	20		110	85-115		
Matrix Spike (BI12002-MS1)		**Source: 1107759-01**			Prepared: 09/20/11 Analyzed: 09/22/11					
Sodium	29	0.050	0.010	mg/L	20	7.0	108	70-130		
Matrix Spike (BI12002-MS2)		**Source: 1108308-01**			Prepared: 09/20/11 Analyzed: 09/22/11					
Sodium	52	0.050	0.010	mg/L	20	30	110	70-130		
Matrix Spike Dup (BI12002-MSD1)		**Source: 1107759-01**			Prepared: 09/20/11 Analyzed: 09/22/11					
Sodium	28	0.050	0.010	mg/L	20	7.0	106	70-130	2	30
Matrix Spike Dup (BI12002-MSD2)		**Source: 1108308-01**			Prepared: 09/20/11 Analyzed: 09/22/11					
Sodium	55	0.050	0.010	mg/L	20	30	121	70-130	4	30

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Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11521 - FC-MF										
Blank (BI11521-BLK1)					Prepared: 09/15/11 Analyzed: 09/16/11					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BI11521-DUP1)		**Source: 1108118-08**			Prepared: 09/15/11 Analyzed: 09/16/11					
Fecal Coliforms Confirmed	0			[blank]		ND				200
Fecal Coliforms	740	1	1	CFU/100 ml		740			0	200
Duplicate (BI11521-DUP2)		**Source: 1108118-11**			Prepared: 09/15/11 Analyzed: 09/16/11					
Fecal Coliforms Confirmed	0			[blank]		ND				200
Fecal Coliforms	30.0	1	1	CFU/100 ml		30.0			0	200
Batch BI11530 - FC-MF										
Blank (BI11530-BLK1)					Prepared: 09/15/11 Analyzed: 09/16/11					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BI11530-DUP1)		**Source: 1108118-01**			Prepared: 09/15/11 Analyzed: 09/16/11					
Fecal Coliforms Confirmed	0			[blank]		ND				200
Fecal Coliforms	9,000	1	1	CFU/100 ml		8400			7	200
Duplicate (BI11530-DUP2)		**Source: 1108118-02**			Prepared: 09/15/11 Analyzed: 09/16/11					
Fecal Coliforms Confirmed	0			[blank]		ND				200
Fecal Coliforms	9,600	1	1	CFU/100 ml		8900			8	200
Batch BI11633 - FC-MF										
Blank (BI11633-BLK1)					Prepared: 09/16/11 Analyzed: 09/17/11					
Fecal Coliforms	1 U	1	1	CFU/100 ml						

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Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11633 - FC-MF										
Duplicate (BI11633-DUP1)		**Source: 1108117-01**			Prepared: 09/16/11 Analyzed: 09/17/11					
Fecal Coliforms Confirmed	0			[blank]		ND				200
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

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Tampa, FL 33619

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Work Order: 1108118

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

SOUTHERN ANALYTICAL LABORATORIES, INC.

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SAL Project No. 1108118

Client Name: Hazan and Sawyer	Contact / Phone: Josephin Edeback-Hirst 813-630-4498
Project Name / Location: PNRS II SE#7 Wastewater System Analyses	jedeback@hazanandsawyer.com
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mL P, H_2SO_4 TKN, NH_3, NOx, COD	500mL P, Cool Alk, SO_4, CBOD, TSS	500mL P, Cool Alk, CBOD, TSS	500mL P, NaOH/Zn Acetate H_2S	125ml P, sterile, $Na_2S_2O_3$ Fecal Coliforms (MF)	Field DO	Field Temp	Field Cond	Field pH	ORP No. of Containers (Total per each location)
01	PNRS II STE-Tank 1	091511	1150	WW		X	1	1		1	1	4.00	28.4	820	7.4	262.2
02	PNRS II STE-Tank 1-D		1155	WW		X	1	1		1	1	4.00	28.4	870	7.4	262.2
03	UNSAT-EC1		1145	WW		X	1	1		1	1	3.87	28.8	810	7.0	57.6
04	UNSAT-EC3		1140	WW		X	1		1		1	5.63	28.7	826	7.1	25.3
05	UNSAT-CL1		1135	WW		X	1	1		1	1	6.60	28.7	825	7.4	47.9
06	UNSAT-CL3		1130	WW		X	1		1		1	6.38	28.2	903	7.3	24.1
07	UNSAT-CL5		1120	WW		X	1		1		1	6.74	28.8	817	7.5	14.3
08	DENIT-SU4		1000	WW		X	1	1		1	1	0.07	26.8	1004	7.7	-355.8
09	DENIT-LS3-REV		0950	WW		X	1		1		1	2.29	27.2	739	7.4	-159.6
10	DENIT-LS3-REV-D		0955	WW		X	1		1		1	2.29	27.2	739	7.4	-159.6
11	DENIT-SU3		0940	WW		X	1	1		1	1	0.04	27.0	1126	7.4	-354.9
12	DENIT-SU3-D		0945	WW		X	1	1		1	1	0.04	27.0	1126	7.4	-354.9

	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: HH	1220 9-12-11		1220 9/12/11
Relinquished:	1320 91511		
Relinquished:			
Relinquished:			
Relinquished:			

Seal intact?	Y N N/A
Samples intact upon arrival?	Y N N/A
Received on ice? Temp_____	Y N N/A
Proper preservatives indicated?	Y N N/A
Rec'd within holding time?	Y N N/A
Volatiles rec'd w/out headspace?	Y N N/A
Proper containers used?	Y N N/A

Instructions / Remarks

1108118

Limited sample volume.

STE Tank DO Retaken on 91611. DO reading Per Josephin 0.87

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1108118

Client Name	Contact / Phone:
Hazan and Sawyer	Josephin Edeback-Hirst 813-630-4498
Project Name / Location	jedeback@hazanandsawyer.com
PNRS II SE#7 Wastewater System Analyses	
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mL P, H_2SO_4 TKN, NH_3, NOx, COD	500mL P, Cool Alk, SO_4, CBOD, TSS	500mL P, Cool Alk, CBOD, TSS	500mL P, NaOH/Zn Acetate H_2S	125ml P, sterile, $Na_2S_2O_3$ Fecal Coliforms (MF)	Field DO	Field Temp	Field Cond	Field pH	ORP No. of Containers (Total per each location)
13	DENIT-LS2-REV	091511	0935	WW		X	1		1		1	3.14	26.8	862	7.5	19.1
14	DENIT-LS4-REV	091511	0925	WW		X	1		1		1	3.31	26.3	809	7.7	21.5
15	DENIT-LS4-REV-D	091511	0930	WW		X	1		1		1	3.31	26.3	809	7.7	21.5
16	RC1	091511	1005	WW		X	1		1		1	0.34	26.8	706	7.3	-119.8
17	RC2	091511	1010	WW		X	1		1		1	0.68	26.3	696	7.2	-123.4
18	RC3	091511	1015	WW		X	1		1		1	0.06	25.8	713	7.3	-128.6
19	RC4	091511	1020	WW		X	1		1		1	0.09	26.6	750	7.4	-129.3
20	UNSAT-CL4	091611	0855	WW		X	1		1		1	7.20	26.3	767	7.4	28.7
21	UNSAT-CL2	091511	0910	WW		X	1		1		1	6.16	26.1	697	7.2	29.9
22	UNSAT-EC4	091511	0920	WW		X	1		1		1	7.09	26.0	673	7.0	51.7
23	UNSAT-SA2	091511	0900	WW		X	1		1		1	6.67	26.0	687	7.0	8.0
24	DFT	091511	0820	WW		X	1	1		1	1	6.84	25.8	711	7.4	6.2

	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: HH	1200 9-12-11	Received:	091211 1600
Relinquished:	1035 091511	Received: MB	1035 091511
Relinquished: MB	9-15-11 11:50	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace? Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks

1108118

Limited sample volume.

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1108118

Client Name	Contact / Phone:
Hazan and Sawyer	Josephin Edeback-Hirst 813-630-4498
Project Name / Location	jedeback@hazanandsawyer.com
PNRS II SE#7 Wastewater System Analyses	
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mL P, H_2SO_4 TKN, NH_3, NOx, COD	500mL P, Cool Alk, SO_4, CBOD, TSS	500mL P, Cool Alk, CBOD, TSS	500mL P, NaOH/Zn Acetate H_2S	125ml P, sterile, $Na_2S_2O_3$ Fecal Coliforms (MF)	Field DO	Field Temp	Field Cond	Field pH	ORP No. of Containers (Total per each location)
	PARAMETER / CONTAINER DESCRIPTION															
25	DFT-D	091511	0825 SH	WW		X	1	1		1	1	6.84	25.8	711	7.4	6.2
26	DENIT-SU1	091511	0745	WW		X	1	1		1	1 0.25	~~1.53~~ SH	22.0	1009	7.0	-365.9
27	DENIT-SU2	091511	0750	WW		X	1	1		1	1 0.13	~~1.83~~	22.5	961	7.0	-343.5
28	DENIT-LS1-REV	091511	0755	WW		X	1		1		1	0.27	22.2	644	7.2	-284.3
29	DENIT-GL1	091511	0800	WW		X	1		1		1	0.07	22.5	794	6.6	-283.5
30	UNSAL-IS1-SP	091611	No Sample	WW		X	1	1		1	1					
31	UNSAT-IS1	091611	1205	WW		X	1	1		1	1	9.54	13.4	831 SH	6.8	-158.3
32	UNSAT-IS2-SP	091611	1155	WW		X	1	1		1	1	1.35	29.3	667	6.3	-130.9
33	UNSAT-IS2	091611	1210	WW		X	1	1		1	1	7.71	10.1	865	7.0	-59.6
34	Field Blank	091511	1110.	R		X	1		1		1	7.86	26.0	35.7	8.2	13.2
35	Equipment Blank	091511	1100	R		X	1		1		1	7.94	25.9	31.7	7.8	7.7
												~~7.06~~ SH				

	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: HH	9-12-11 1220		
Relinquished:	91511 1320	Received:	91211 1220
Relinquished:	91611 1600	Received:	Date/Time: 91511 1320
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact?	Y N N/A
Samples intact upon arrival?	Y N N/A
Received on ice? Temp_____	Y N N/A
Proper preservatives indicated?	Y N N/A
Rec'd within holding time?	Y N N/A
Volatiles rec'd w/out headspace?	Y N N/A
Proper containers used?	Y N N/A

Instructions / Remarks

1108118

Limited sample volume.

Chain of Custody.xls
Rev.Date 11/19/01

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Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

September 28, 2011
Work Order: 1108117

Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**UNSAT-IS3-SP**						
Matrix		**Wastewater**						
SAL Sample Number		**1108117-01**						
Date/Time Collected		**09/16/11 12:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.061	EPA 350.1	0.010	0.005		09/19/11 17:32	SMD
Carbonaceous BOD	mg/L	7	SM 5210B	2	2	09/18/11 09:28	09/23/11 09:00	MEJ
Chemical Oxygen Demand	mg/L	44	EPA 410.4	25	10		09/19/11 09:00	MMF
Sulfate	mg/L	75	EPA 300.0	0.60	0.20		09/20/11 18:27	MEJ
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	59	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	3.4	EPA 351.2	0.20	0.05	09/19/11 17:11	09/28/11 10:22	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.04	0.01		09/23/11 10:41	SMD
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/16/11 16:27	09/17/11 13:30	MEJ
Sample Description		**UNSAT-IS3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108117-02**						
Date/Time Collected		**09/14/11 08:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**09/14/11 11:15**						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.49	EPA 350.1	0.010	0.005		09/19/11 17:32	SMD
Carbonaceous BOD	mg/L	3	SM 5210B	2	2	09/15/11 10:08	09/20/11 13:00	MMF
Chemical Oxygen Demand	mg/L	48	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	0.68	EPA 300.0	0.04	0.01		09/15/11 00:36	MEJ
Nitrite (as N)	mg/L	0.33	EPA 300.0	0.04	0.01		09/15/11 00:36	MEJ
Sulfate	mg/L	200	EPA 300.0	0.60	0.20		09/20/11 18:27	MEJ
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	180	SM 2320B	8.0	2.0		09/15/11 08:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	09/19/11 17:11	09/28/11 10:22	SMD
Total Suspended Solids	mg/L	8	SM 2540D	1	1	09/15/11 13:50	09/16/11 15:18	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/14/11 12:56	09/15/11 12:22	MEJ

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September 28, 2011
Work Order: 1108117

Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**UNSAT-IS4-SP**						
Matrix		**Wastewater**						
SAL Sample Number		**1108117-03**						
Date/Time Collected		**09/16/11 12:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.86	EPA 350.1	0.010	0.005		09/19/11 17:32	SMD
Carbonaceous BOD	mg/L	5	SM 5210B	2	2	09/18/11 09:28	09/23/11 09:00	MEJ
Chemical Oxygen Demand	mg/L	61	EPA 410.4	25	10		09/19/11 09:00	MMF
Sulfate	mg/L	63	EPA 300.0	0.60	0.20		09/20/11 18:27	MEJ
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	270	SM 2320B	8.0	2.0		09/21/11 09:05	JAG
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	09/19/11 17:11	09/28/11 10:22	SMD
Total Suspended Solids	mg/L	2	SM 2540D	1	1	09/20/11 10:02	09/21/11 09:19	JEW
Nitrate+Nitrite (N)	mg/L	1.2	EPA 353.2	0.04	0.01		09/23/11 10:41	SMD
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/16/11 16:27	09/17/11 13:30	MEJ
Sample Description		**UNSAT-IS4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108117-04**						
Date/Time Collected		**09/14/11 08:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**09/14/11 11:15**						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	09/20/11 11:28	09/20/11 12:08	JAG
Ammonia as N	mg/L	0.59	EPA 350.1	0.010	0.005		09/19/11 17:32	SMD
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	09/15/11 10:08	09/20/11 13:00	MMF
Chemical Oxygen Demand	mg/L	69	EPA 410.4	25	10		09/19/11 09:00	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/15/11 00:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/15/11 00:36	MEJ
Sulfate	mg/L	110	EPA 300.0	0.60	0.20		09/21/11 13:18	MEJ
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10	09/20/11 08:50	09/20/11 11:13	JAG
Total Alkalinity	mg/L	400	SM 2320B	8.0	2.0		09/15/11 08:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	09/19/11 17:11	09/28/11 10:22	SMD
Total Suspended Solids	mg/L	6	SM 2540D	1	1	09/15/11 13:50	09/16/11 15:18	JEW
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	09/14/11 12:56	09/15/11 12:22	MEJ

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Laboratory Report

Project Name		**PNRS II**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**UNSAT-IS4**						
Matrix		**Wastewater**						
SAL Sample Number		**1108117-04RE1**						
Date/Time Collected		**09/14/11 08:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**09/14/11 11:15**						
Inorganics								
Sulfate	mg/L	110	EPA 300.0	0.60	0.20		09/22/11 13:38	MEJ

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11433 - Ion Chromatography 300.0 Prep										
Blank (BI11433-BLK1)					Prepared & Analyzed: 09/15/11					
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11433-BS1)					Prepared & Analyzed: 09/15/11					
Sulfate	9.19	0.60	0.20	mg/L	9.0		102	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115		
LCS Dup (BI11433-BSD1)					Prepared & Analyzed: 09/15/11					
Sulfate	8.74	0.60	0.20	mg/L	9.0		97	85-115	5	200
Nitrite (as N)	1.30	0.04	0.01	mg/L	1.4		93	85-115	2	200
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7		95	85-115	4	200
Matrix Spike (BI11433-MS1)		**Source: 1107594-04**			Prepared & Analyzed: 09/15/11					
Nitrite (as N)	1.36	0.04	0.01	mg/L	1.4	ND	97	85-115		
Sulfate	8.66	0.60	0.20	mg/L	9.0	ND	96	85-115		
Nitrate (as N)	1.59	0.04	0.01	mg/L	1.7	ND	94	85-115		
Matrix Spike (BI11433-MS2)		**Source: 1108117-04**			Prepared & Analyzed: 09/15/11					
Sulfate	127 +O	0.60	0.20	mg/L	9.0	107	222	85-115		
Nitrite (as N)	1.51	0.04	0.01	mg/L	1.4	ND	108	85-115		
Nitrate (as N)	1.95	0.04	0.01	mg/L	1.7	0.226	101	85-115		
Batch BI11507 - alkalinity										
Blank (BI11507-BLK1)					Prepared & Analyzed: 09/15/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11507 - alkalinity										
LCS (BI11507-BS1)					Prepared & Analyzed: 09/15/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BI11507-MS1)		**Source: 1108117-04**			Prepared & Analyzed: 09/15/11					
Total Alkalinity	510	8.0	2.0	mg/L	120	400	88	80-120		
Matrix Spike Dup (BI11507-MSD1)		**Source: 1108117-04**			Prepared & Analyzed: 09/15/11					
Total Alkalinity	510	8.0	2.0	mg/L	120	400	88	80-120	0	26
Batch BI11522 - BOD										
Blank (BI11522-BLK1)					Prepared: 09/15/11 Analyzed: 09/20/11					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BI11522-BS1)					Prepared: 09/15/11 Analyzed: 09/20/11					
Carbonaceous BOD	177	2	2	mg/L	200		89	85-115		
LCS Dup (BI11522-BSD1)					Prepared: 09/15/11 Analyzed: 09/20/11					
Carbonaceous BOD	180	2	2	mg/L	200		90	85-115	2	200
Duplicate (BI11522-DUP1)		**Source: 1107550-01**			Prepared: 09/15/11 Analyzed: 09/20/11					
Carbonaceous BOD	130	2	2	mg/L		150			15	25
Batch BI11527 - TSS prep										
Blank (BI11527-BLK1)					Prepared: 09/15/11 Analyzed: 09/16/11					
Total Suspended Solids	1 U	1	1	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11527 - TSS prep										
LCS (BI11527-BS1)					Prepared: 09/15/11 Analyzed: 09/16/11					
Total Suspended Solids	52.0	1	1	mg/L	50		104	85-115		
Duplicate (BI11527-DUP1)		**Source: 1108139-01**			Prepared: 09/15/11 Analyzed: 09/16/11					
Total Suspended Solids	133	1	1	mg/L		133			0	30
Duplicate (BI11527-DUP2)		**Source: 1108142-01**			Prepared: 09/15/11 Analyzed: 09/16/11					
Total Suspended Solids	103	1	1	mg/L		107			4	30
Batch BI11801 - BOD										
Blank (BI11801-BLK1)					Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BI11801-BS1)					Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	176	2	2	mg/L	200		88	85-115		
LCS Dup (BI11801-BSD1)					Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	195	2	2	mg/L	200		98	85-115	11	200
Duplicate (BI11801-DUP1)		**Source: 1107979-01**			Prepared: 09/18/11 Analyzed: 09/23/11					
Carbonaceous BOD	2 U	2	2	mg/L		ND				25
Batch BI11933 - Ammonia by SEAL										
Blank (BI11933-BLK1)					Prepared & Analyzed: 09/19/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11933 - Ammonia by SEAL										
LCS (BI11933-BS1)					Prepared & Analyzed: 09/19/11					
Ammonia as N	0.48	0.010	0.005	mg/L	0.50		96	90-110		
Matrix Spike (BI11933-MS1)		**Source: 1107975-07**			Prepared & Analyzed: 09/19/11					
Ammonia as N	0.48	0.010	0.005	mg/L	0.50	ND	97	90-110		
Matrix Spike Dup (BI11933-MSD1)		**Source: 1107975-07**			Prepared & Analyzed: 09/19/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50	ND	98	90-110	2	10
Batch BI11942 - COD prep										
Blank (BI11942-BLK1)					Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BI11942-BS1)					Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BI11942-MS1)		**Source: 1108118-13**			Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	50	25	10	mg/L	50	ND	100	85-115		
Matrix Spike Dup (BI11942-MSD1)		**Source: 1108118-13**			Prepared & Analyzed: 09/19/11					
Chemical Oxygen Demand	50	25	10	mg/L	50	ND	100	85-115	0	32
Batch BI11945 - Digestion for TKN by EPA 351.2										
Blank (BI11945-BLK1)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11945 - Digestion for TKN by EPA 351.2										
Blank (BI11945-BLK2)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BI11945-BLK3)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BI11945-BLK4)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BI11945-BS1)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.71	0.20	0.05	mg/L	2.5		108	90-110		
LCS (BI11945-BS2)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		107	90-110		
LCS (BI11945-BS3)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.70	0.20	0.05	mg/L	2.5		108	90-110		
LCS (BI11945-BS4)					Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.72	0.20	0.05	mg/L	2.5		109	90-110		
Matrix Spike (BI11945-MS1)		**Source: 1108026-10**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.89	0.20	0.05	mg/L	2.5	ND	115	80-120		
Matrix Spike (BI11945-MS2)		**Source: 1108147-02**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	3.76	0.20	0.05	mg/L	2.5	1.24	101	80-120		
Matrix Spike (BI11945-MS3)		**Source: 1107795-01**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5	0.0768	89	80-120		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11945 - Digestion for TKN by EPA 351.2										
Matrix Spike (BI11945-MS4)		**Source: 1107795-10**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.55	0.20	0.05	mg/L	2.5	0.0719	99	80-120		
Matrix Spike Dup (BI11945-MSD1)		**Source: 1108026-10**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.90	0.20	0.05	mg/L	2.5	ND	116	80-120	0.3	20
Matrix Spike Dup (BI11945-MSD2)		**Source: 1108147-02**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	3.96	0.20	0.05	mg/L	2.5	1.24	109	80-120	5	20
Matrix Spike Dup (BI11945-MSD3)		**Source: 1107795-01**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.54	0.20	0.05	mg/L	2.5	0.0768	98	80-120	10	20
Matrix Spike Dup (BI11945-MSD4)		**Source: 1107795-10**			Prepared: 09/19/11 Analyzed: 09/28/11					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5	0.0719	98	80-120	1	20
Batch BI12007 - TSS prep										
Blank (BI12007-BLK1)					Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BI12007-BS1)					Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	49.0	1	1	mg/L	50		98	85-115		
Duplicate (BI12007-DUP1)		**Source: 1108351-01**			Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	184	1	1	mg/L		190			3	30
Duplicate (BI12007-DUP2)		**Source: 1108351-05**			Prepared: 09/20/11 Analyzed: 09/21/11					
Total Suspended Solids	1.50	1	1	mg/L		1.50			0	30

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12013 - Sulfide prep										
Blank (BI12013-BLK1)					Prepared & Analyzed: 09/20/11					
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BI12013-BS1)					Prepared & Analyzed: 09/20/11					
Sulfide	4.68	0.40	0.10	mg/L	5.0		94	85-115		
Matrix Spike (BI12013-MS1)		**Source: 1108117-04**			Prepared & Analyzed: 09/20/11					
Sulfide	5.07	0.40	0.10	mg/L	5.0	ND	101	85-115		
Matrix Spike Dup (BI12013-MSD1)		**Source: 1108117-04**			Prepared & Analyzed: 09/20/11					
Sulfide	5.07	0.40	0.10	mg/L	5.0	ND	101	85-115	0	14
Batch BI12023 - Ion Chromatography 300.0 Prep										
Blank (BI12023-BLK1)					Prepared & Analyzed: 09/20/11					
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BI12023-BS1)					Prepared & Analyzed: 09/20/11					
Sulfate	8.28	0.60	0.20	mg/L	9.0		92	85-115		
LCS Dup (BI12023-BSD1)					Prepared & Analyzed: 09/20/11					
Sulfate	8.54	0.60	0.20	mg/L	9.0		95	85-115	3	200
Matrix Spike (BI12023-MS1)		**Source: 1108484-02**			Prepared & Analyzed: 09/20/11					
Sulfate	43.8 +O	0.60	0.20	mg/L	9.0	39.4	49	85-115		
Matrix Spike (BI12023-MS2)		**Source: 1108117-03**			Prepared & Analyzed: 09/20/11					
Sulfate	151	0.60	0.20	mg/L	90	62.8	98	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12105 - Ion Chromatography 300.0 Prep										
Blank (BI12105-BLK1)					Prepared & Analyzed: 09/21/11					
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BI12105-BS1)					Prepared & Analyzed: 09/21/11					
Sulfate	8.34	0.60	0.20	mg/L	9.0		93	85-115		
LCS Dup (BI12105-BSD1)					Prepared & Analyzed: 09/21/11					
Sulfate	8.18	0.60	0.20	mg/L	9.0		91	85-115	2	200
Matrix Spike (BI12105-MS1)		**Source: 1107977-01**			Prepared & Analyzed: 09/21/11					
Sulfate	144	0.60	0.20	mg/L	90	62.1	91	85-115		
Matrix Spike (BI12105-MS2)		**Source: 1107978-01**			Prepared & Analyzed: 09/21/11					
Sulfate	81.9 +O	0.60	0.20	mg/L	9.0	66.8	168	85-115		
Batch BI12128 - alkalinity										
Blank (BI12128-BLK1)					Prepared & Analyzed: 09/21/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BI12128-BS1)					Prepared & Analyzed: 09/21/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BI12128-MS1)		**Source: 1108254-05**			Prepared & Analyzed: 09/21/11					
Total Alkalinity	190	8.0	2.0	mg/L	120	80	86	80-120		
Matrix Spike Dup (BI12128-MSD1)		**Source: 1108254-05**			Prepared & Analyzed: 09/21/11					
Total Alkalinity	190	8.0	2.0	mg/L	120	80	86	80-120	0	26

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12303 - Nitrate 353.2 by seal										
Blank (BI12303-BLK1)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BI12303-BLK2)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BI12303-BLK3)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BI12303-BLK4)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BI12303-BS1)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.769	0.04	0.01	mg/L	0.80		96	90-110		
LCS (BI12303-BS2)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.780	0.04	0.01	mg/L	0.80		97	90-110		
LCS (BI12303-BS3)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.757	0.04	0.01	mg/L	0.80		95	90-110		
LCS (BI12303-BS4)					Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.751	0.04	0.01	mg/L	0.80		94	90-110		
Matrix Spike (BI12303-MS1)		**Source: 1108025-10**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.960	0.04	0.01	mg/L	1.0	ND	96	77-119		
Matrix Spike (BI12303-MS2)		**Source: 1108026-01**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.984	0.04	0.01	mg/L	1.0	ND	98	77-119		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12303 - Nitrate 353.2 by seal										
Matrix Spike (BI12303-MS3)		**Source: 1108026-10**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.967	0.04	0.01	mg/L	1.0	ND	97	77-119		
Matrix Spike (BI12303-MS4)		**Source: 1107795-01**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.947	0.04	0.01	mg/L	1.0	ND	95	77-119		
Matrix Spike Dup (BI12303-MSD1)		**Source: 1108025-10**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.968	0.04	0.01	mg/L	1.0	ND	97	77-119	0.8	20
Matrix Spike Dup (BI12303-MSD2)		**Source: 1108026-01**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.997	0.04	0.01	mg/L	1.0	ND	100	77-119	1	20
Matrix Spike Dup (BI12303-MSD3)		**Source: 1108026-10**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.971	0.04	0.01	mg/L	1.0	ND	97	77-119	0.4	20
Matrix Spike Dup (BI12303-MSD4)		**Source: 1107795-01**			Prepared & Analyzed: 09/23/11					
Nitrate+Nitrite (N)	0.935	0.04	0.01	mg/L	1.0	ND	93	77-119	1	20

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Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11429 - FC-MF										
Blank (BI11429-BLK1)					Prepared: 09/14/11 Analyzed: 09/15/11					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BI11429-DUP1)		**Source: 1108149-02**			Prepared: 09/14/11 Analyzed: 09/15/11					
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200
Batch BI11633 - FC-MF										
Blank (BI11633-BLK1)					Prepared: 09/16/11 Analyzed: 09/17/11					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BI11633-DUP1)		**Source: 1108117-01**			Prepared: 09/16/11 Analyzed: 09/17/11					
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1108117

Client Name	Contact / Phone:
Hazan and Sawyer	Josephin Edeback-Hirst 813-630-4498
Project Name / Location	jedeback@hazanandsawyer.com
PNRS II SE#7 Wastewater System Analyses	
Samplers: (Signature) Josephin Edeback-Hirst	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mL P, H_2SO_4 TKN, NH_3, NOx, COD	500mL P, Cool Alk, SO_4, CBOD, TSS	500mL P, NaOH/Zn Acetate H_2S	125ml P, sterile, $Na_2S_2O_3$ Fecal Coliforms (MF)	Field DO	Field Temp	Field Cond	Field pH	No. of Containers (Total per each location)
01	UNSAT-IS3-SP			WW		X	1	1	1	1					
02	UNSAT-IS3	9/14/11	8:25am	WW		X	1	1	1	1	8.23	22.9	923	7.49	4
03	UNSAT-IS4-SP			WW		X	1	1	1	1					
04	UNSAT-~~IS~~ IS4	9/14/11	8:25am	WW		X	1	1	1	1	2.11	22.4	1136	6.75	4

Containers Prepared/ Relinquished:	Date/Time: 0925 9/12/11	Received:	Date/Time: 12:00 9/13/11
Relinquished:	Date/Time: 9/14/11	Received:	Date/Time: 10:24 9-14-11
Relinquished: courier	Date/Time:	Received:	Date/Time: 1115 9/14/11
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N (N/A)
Samples intact upon arrival? (Y) N N/A
Received on ice? Temp_____ (Y) N N/A
Proper preservatives indicated? (Y) N N/A
Rec'd within holding time? (Y) N N/A
Volatiles rec'd w/out headspace Y N (N/A)
Proper containers used? (Y) N N/A

Instructions / Remarks

1108117

Limited sample volume.

Pace Analytical Services, Inc.
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(386)672-5668

September 29, 2011

Ms. Josefin Edebeck-Hirst
Hazen and Sawyer, P.C
10002 Princess Palm Avenue
Suite 200
Tampa, FL 33619

RE: Project: PNRS II SE #7
Pace Project No.: 3538512

Dear Ms. Edebeck-Hirst:
Enclosed are the analytical results for sample(s) received by the laboratory on September 16, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sakina Mckenzie

sakina.mckenzie@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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CERTIFICATIONS

Project: PNRS II SE #7
Pace Project No.: 3538512

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH 0216
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: LA090012
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL1264
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Montana Certification #: Cert 0074
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pennsylvania Certification #: 68-547
Puerto Rico Certification #: FL01264
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
Virginia Certification #: 00432
Wyoming Certification: FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: PNRS II SE #7
Pace Project No.: 3538512

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3538512001	**PNRS II-STE-TANK1**	Water	09/15/11 11:45	09/16/11 23:50
3538512002	**UNSTAT-IS1**	Water	09/16/11 11:55	09/16/11 23:50

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SAMPLE ANALYTE COUNT

Project: PNRS II SE #7
Pace Project No.: 3538512

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3538512001	**PNRS II-STE-TANK1**		SMM	4	PASI-O
		SM 2320B	AMD	1	PASI-O
		SM 2540C	MMD	1	PASI-O
		SM 2540D	MMD	1	PASI-O
		SM 4500-S2F	AAM	1	PASI-O
		SM 5210B	KDM	1	PASI-O
		EPA 300.0	LAJ	3	PASI-O
		EPA 300.0	LAJ	1	PASI-O
		EPA 350.1	HEA	1	PASI-O
		EPA 351.2	AMD	1	PASI-O
		EPA 410.4	MMD	1	PASI-O
3538512002	**UNSTAT-IS1**		SMM	4	PASI-O
		SM 2320B	AMD	1	PASI-O
		SM 4500-S2F	AAM	1	PASI-O
		SM 5210B	KDM	1	PASI-O
		EPA 300.0	LAJ	3	PASI-O
		EPA 300.0	LAJ	1	PASI-O
		EPA 350.1	HEA	1	PASI-O
		EPA 351.2	AMD	1	PASI-O
		EPA 410.4	MMD	1	PASI-O

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ANALYTICAL RESULTS

Project: PNRS II SE #7
Pace Project No.: 3538512

Sample: PNRS II-STE-TANK1 **Lab ID: 3538512001** Collected: 09/15/11 11:45 Received: 09/16/11 23:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	**7.4**	Std. Units			1		09/18/11 10:03		
Field Temperature	**28.4**	deg C			1		09/18/11 10:03		
Field Specific Conductance	**820**	umhos/cm			1		09/18/11 10:03		
Oxygen, Dissolved	**4.0**	mg/L			1		09/18/11 10:03	7782-44-7	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**258**	mg/L	5.0	5.0	1		09/20/11 11:44		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**327**	mg/L	5.0	5.0	1		09/21/11 10:22		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**7.0**	mg/L	5.0	5.0	1		09/19/11 11:00		
4500S2F Hydrogen Sulfide	Analytical Method: SM 4500-S2F								
Un-ionized Hydrogen Sulfide	**1.3**	mg/L	1.0	1.0	1		09/22/11 09:00		N2
5210B cBOD, 5 day	Analytical Method: SM 5210B		Preparation Method: SM 5210B						
Carbonaceous BOD, 5 day	**37.4**	mg/L	2.0	2.0	1	09/21/11 06:40	09/26/11 12:39		Q
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.025U**	mg/L	0.050	0.025	1		09/17/11 10:33	14797-55-8	
Nitrite as N	**0.025U**	mg/L	0.050	0.025	1		09/17/11 10:33	14797-65-0	
Orthophosphate as P	**2.8**	mg/L	0.10	0.050	1		09/17/11 10:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**34.5**	mg/L	5.0	2.5	1		09/19/11 16:57	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**25.7**	mg/L	0.25	0.10	5		09/21/11 16:56	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2		Preparation Method: EPA 351.2						
Nitrogen, Kjeldahl, Total	**27.5**	mg/L	0.50	0.25	1	09/19/11 10:15	09/20/11 08:56	7727-37-9	
410.4 COD	Analytical Method: EPA 410.4								
Chemical Oxygen Demand	**132**	mg/L	20.0	12.5	1		09/20/11 17:05		

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ANALYTICAL RESULTS

Project: PNRS II SE #7
Pace Project No.: 3538512

Sample: UNSTAT-IS1 **Lab ID: 3538512002** Collected: 09/16/11 11:55 Received: 09/16/11 23:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	**6.8**	Std. Units			1		09/18/11 10:06		
Field Temperature	**13.4**	deg C			1		09/18/11 10:06		
Field Specific Conductance	**831**	umhos/cm			1		09/18/11 10:06		
Oxygen, Dissolved	**9.54**	mg/L			1		09/18/11 10:06	7782-44-7	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**273**	mg/L	5.0	5.0	1		09/20/11 11:51		
4500S2F Hydrogen Sulfide	Analytical Method: SM 4500-S2F								
Un-ionized Hydrogen Sulfide	**1.1**	mg/L	1.0	1.0	1		09/22/11 09:00		N2
5210B cBOD, 5 day	Analytical Method: SM 5210B		Preparation Method: SM 5210B						
Carbonaceous BOD, 5 day	**6.4**	mg/L	2.0	2.0	1	09/21/11 06:40	09/26/11 12:41		Q
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.025U**	mg/L	0.050	0.025	1		09/17/11 11:09	14797-55-8	
Nitrite as N	**0.025U**	mg/L	0.050	0.025	1		09/17/11 11:09	14797-65-0	
Orthophosphate as P	**1.5**	mg/L	0.10	0.050	1		09/17/11 11:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**89.2**	mg/L	5.0	2.5	1		09/19/11 17:09	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**9.4**	mg/L	0.050	0.020	1		09/21/11 16:33	7664-41-7	J(M1)
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2		Preparation Method: EPA 351.2						
Nitrogen, Kjeldahl, Total	**10.5**	mg/L	0.50	0.25	1	09/19/11 10:15	09/20/11 08:57	7727-37-9	
410.4 COD	Analytical Method: EPA 410.4								
Chemical Oxygen Demand	**53.7**	mg/L	20.0	12.5	1		09/20/11 17:05		

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WET/10146 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 3538512001, 3538512002

METHOD BLANK: 257042 Matrix: Water
Associated Lab Samples: 3538512001, 3538512002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	5.0U	5.0	09/20/11 09:41	

LABORATORY CONTROL SAMPLE: 257043

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	250	246	98	90-110	

MATRIX SPIKE SAMPLE: 257045

Parameter	Units	3537975001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	951	1250	2200	100	90-110	

MATRIX SPIKE SAMPLE: 257047

Parameter	Units	3538416002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	252	250	339	35	90-110	J(M1)

SAMPLE DUPLICATE: 257044

Parameter	Units	3537975001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	951	925	3	20	

SAMPLE DUPLICATE: 257046

Parameter	Units	3538416002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	252	246	3	20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WET/10173 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 3538512001

METHOD BLANK: 257805 Matrix: Water
Associated Lab Samples: 3538512001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	5.0U	5.0	09/21/11 10:20	

LABORATORY CONTROL SAMPLE: 257806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	279	93	90-110	

SAMPLE DUPLICATE: 257807

Parameter	Units	3538451002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	484	479	1	20	

SAMPLE DUPLICATE: 257808

Parameter	Units	3538602001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	313	304	3	20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WET/10130 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 3538512001

METHOD BLANK: 256549 Matrix: Water
Associated Lab Samples: 3538512001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	5.0U	5.0	09/19/11 11:00	

LABORATORY CONTROL SAMPLE: 256550

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	100	100	90-110	

SAMPLE DUPLICATE: 256551

Parameter	Units	3538276001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	5.0U	5.0U		20	

SAMPLE DUPLICATE: 256552

Parameter	Units	3053825015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	5.0U		20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WET/10177 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B cBOD, 5 day
Associated Lab Samples: 3538512001, 3538512002

METHOD BLANK: 257843 Matrix: Water
Associated Lab Samples: 3538512001, 3538512002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Carbonaceous BOD, 5 day	mg/L	2.0U	2.0	09/26/11 12:30	

LABORATORY CONTROL SAMPLE: 257844

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbonaceous BOD, 5 day	mg/L	198	202	102	85-115	

SAMPLE DUPLICATE: 257845

Parameter	Units	3538544002 Result	Dup Result	RPD	Max RPD	Qualifiers
Carbonaceous BOD, 5 day	mg/L	3.0U	3.0U		20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WETA/12178 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 3538512001, 3538512002

METHOD BLANK: 256406 Matrix: Water
Associated Lab Samples: 3538512001, 3538512002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	0.025U	0.050	09/18/11 08:31	
Nitrite as N	mg/L	0.025U	0.050	09/18/11 08:31	
Orthophosphate as P	mg/L	0.050U	0.10	09/18/11 08:31	

LABORATORY CONTROL SAMPLE: 256407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	5	5.3	106	90-110	
Nitrite as N	mg/L	5	5.4	108	90-110	
Orthophosphate as P	mg/L	10	10.4	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 256408 256409

Parameter	Units	3538512001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.025U	5	5	5.1	5.1	103	103	90-110	.1	20	
Nitrite as N	mg/L	0.025U	5	5	5.1	5.1	103	103	90-110	.09	20	
Orthophosphate as P	mg/L	2.8	10	10	13.2	13.2	104	104	90-110	.06	20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WETA/12225 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 3538512001, 3538512002

METHOD BLANK: 257084 Matrix: Water
Associated Lab Samples: 3538512001, 3538512002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	2.5U	5.0	09/19/11 14:20	

LABORATORY CONTROL SAMPLE: 257085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 257086 257087

Parameter	Units	3538425001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	725	5000	5000	5750	5770	101	101	90-110	.4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 257088 257089

Parameter	Units	3053825001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	29.0	50	50	84.3	84.4	111	111	90-110	.1	20	J(M1)

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WETA/12245 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 3538512001

METHOD BLANK: 257783 Matrix: Water
Associated Lab Samples: 3538512001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	0.020U	0.050	09/21/11 12:55	

LABORATORY CONTROL SAMPLE: 257784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	1.0	104	90-110	

MATRIX SPIKE SAMPLE: 257786

Parameter	Units	3538420001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.084	1	1.1	99	90-110	

SAMPLE DUPLICATE: 257785

Parameter	Units	3538420001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.084	0.069	19	20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WETA/12246
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Associated Lab Samples: 3538512002

METHOD BLANK: 257787
Matrix: Water
Associated Lab Samples: 3538512002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	0.020U	0.050	09/21/11 16:27	

LABORATORY CONTROL SAMPLE: 257788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	1.0	104	90-110	

MATRIX SPIKE SAMPLE: 257790

Parameter	Units	3538512002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	9.4	1	10.6	121	90-110	J(M1)

SAMPLE DUPLICATE: 257789

Parameter	Units	3538512002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	9.4	9.4	.5	20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WETA/12204 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 3538512001, 3538512002

METHOD BLANK: 256610 Matrix: Water
Associated Lab Samples: 3538512001, 3538512002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	0.25U	0.50	09/20/11 08:45	

LABORATORY CONTROL SAMPLE: 256611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	20	20.2	101	90-110	

MATRIX SPIKE SAMPLE: 256613

Parameter	Units	3538233002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	1.1	20	21.5	102	90-110	

SAMPLE DUPLICATE: 256612

Parameter	Units	3538233002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	1.1	1.3	11	20	

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QUALITY CONTROL DATA

Project: PNRS II SE #7
Pace Project No.: 3538512

QC Batch: WETA/12235 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 3538512001, 3538512002

METHOD BLANK: 257483 Matrix: Water
Associated Lab Samples: 3538512001, 3538512002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	12.5U	20.0	09/20/11 17:05	1p

LABORATORY CONTROL SAMPLE: 257484

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	500	505	101	90-110	

MATRIX SPIKE SAMPLE: 257486

Parameter	Units	3537197001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	12.5U	500	487	95	90-110	

SAMPLE DUPLICATE: 257485

Parameter	Units	3537197001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	12.5U	12.9 I		20	

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QUALIFIERS

Project: PNRS II SE #7
Pace Project No.: 3538512

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
1p	The recovery of the analyte in the CRDL standard (also known as the reporting limit verification) did not meet the acceptance criteria.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold TNI accreditation for this parameter.
Q	Sample held beyond the accepted holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PNRS II SE #7
Pace Project No.: 3538512

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3538512001	**PNRS II-STE-TANK1**		FLD/		
3538512002	**UNSTAT-IS1**		FLD/		
3538512001	**PNRS II-STE-TANK1**	SM 2320B	WET/10146		
3538512002	**UNSTAT-IS1**	SM 2320B	WET/10146		
3538512001	**PNRS II-STE-TANK1**	SM 2540C	WET/10173		
3538512001	**PNRS II-STE-TANK1**	SM 2540D	WET/10130		
3538512001	**PNRS II-STE-TANK1**	SM 4500-S2F	WET/10200		
3538512002	**UNSTAT-IS1**	SM 4500-S2F	WET/10200		
3538512001	**PNRS II-STE-TANK1**	SM 5210B	WET/10177	SM 5210B	WET/10202
3538512002	**UNSTAT-IS1**	SM 5210B	WET/10177	SM 5210B	WET/10202
3538512001	**PNRS II-STE-TANK1**	EPA 300.0	WETA/12178		
3538512002	**UNSTAT-IS1**	EPA 300.0	WETA/12178		
3538512001	**PNRS II-STE-TANK1**	EPA 300.0	WETA/12225		
3538512002	**UNSTAT-IS1**	EPA 300.0	WETA/12225		
3538512001	**PNRS II-STE-TANK1**	EPA 350.1	WETA/12245		
3538512002	**UNSTAT-IS1**	EPA 350.1	WETA/12246		
3538512001	**PNRS II-STE-TANK1**	EPA 351.2	WETA/12204	EPA 351.2	WETA/12215
3538512002	**UNSTAT-IS1**	EPA 351.2	WETA/12204	EPA 351.2	WETA/12215
3538512001	**PNRS II-STE-TANK1**	EPA 410.4	WETA/12235		
3538512002	**UNSTAT-IS1**	EPA 410.4	WETA/12235		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

3538512

Page: of

1420067

Section A Required Client Information:

Company: Hazen and Sawyer
Address: 10002 Princess Palm Ave Suite 200, Tampa, FL 33619
Email To: jedebach@hazenandsawyer.com
Phone: 813-630-4498 Fax: 630-1967
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Joelin Edebacher
Copy To:
Purchase Order No.:
Project Name: PNRS II SE #7
Project Number: 44237-001-100

Section C Invoice Information:

Attention: Joelin Edebacher
Company Name: Hazen and Sawyer
Address: same
Pace Quote Reference:
Pace Project Manager: Salina
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER WW

Site Location STATE: FL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	TDS / TSS	NO_2, NO_3	Alkalinity	CBODS	SO_4	COD	TKN	NH_3	Hydrogen Sulfide	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PNRS II - STE - Tank 1	WW	G	9/15/11	11:45am													✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	UNSAT - 152	WW	G	9/16/11	11:55am														✓	✓	✓	✓	✓	✓	✓	✓	
3		IS-1	STE																								
4		DO = 9.54 mg/L	4.0																								
5		T = 13.4	28.4																								
6		ms = 831 ms	820																								
7		pH = 6.8	7.4																								
8		ORP = -158.3 mV	262.2																								
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Empty coolers with ice	[signature]	9-13-11	13w	[signature]	9-13-11	1:20pm	
[signature]	[signature]	9-16-11	1:55	[signature]	9/16/11	1355	
				K. Glover Pace	9/16/11	1440	17 Y
	Bluestreak	9/16/11	2200	[signature]	9-17-11	23:50	

SAMPLER NAME AND SIGNATURE: Josefin Hirst
PRINT Name of SAMPLER: Josefin Hirst
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 9/16/11

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt Form (SCUR)

Table Number: _____

Pace Analytical

Client Name: Hazen and Sawyer Project # 353857.12

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace ☐ Other _____

Tracking # _____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other _____

Thermometer Used AM Type of Ice: (Wet) Blue None

Cooler Temperature °C .6 (Visual) +1.0 (Correction Factor) -.4 (Actual)

Date and Initials of person examining contents: AM 9-17-11

(Temp should be above freezing to 0°-6°C). If below 0°C, then was sample frozen? ☐ Yes ☐ No

Receipt of samples satisfactory: ☐ Yes ☐ No

Rush TAT requested on COC:

If yes, then all conditions below were met:	If no, then mark box & describe issue (use comments area if necessary):
Chain of Custody Present	☐
Chain of Custody Filled Out	☐
Relinquished Signature & Sampler Name COC	☐
Samples Arrived within Hold Time	☐
Sufficient Volume	☐
Correct Containers Used	☐
Containers Intact	☐
Sample Labels match COC (sample IDs & date/time of collection)	☐ No Labels: ☐ No Time/Date on Labels: ☐
All containers needing preservation are found to be in compliance with EPA recommendation.	☐
No Headspace in VOA Vials (>6mm):	☐

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments): _____

Project Manager Review: _____ Date: 9/19/2011 16 am

Finished Product Information Only

F.P. Sample ID: _____

Production Code: _____

Date/Time Opened: _____

Number of Unopened Bottles Remaining: _____

Extra Sample in Shed: Yes No

Size & Qty of Bottles Received

_____ x 5 Gal

_____ x 2.5 Gal

_____ x 1 Gal

_____ x 1 Liter

_____ x 500 mL

_____ x 250 mL

_____ x Other: _____

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

October 4, 2011
Work Order: 1108119
Revised Report

Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-SU4-18**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-01**						
Date/Time Collected		**09/16/11 11:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.7	DEP FT1100	0.1	0.1		09/16/11 11:15	SDH
Water Temperature	°C	27.5	DEP FT1400	0.1	0.1		09/16/11 11:15	SDH
Specific conductance	umhos/cm	1,008	DEP FT1200	0.1	0.1		09/16/11 11:15	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		09/16/11 11:15	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Sulfate	mg/L	220	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU4-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-02**						
Date/Time Collected		**09/16/11 11:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		09/16/11 11:10	SDH
Water Temperature	°C	27.3	DEP FT1400	0.1	0.1		09/16/11 11:10	SDH
Specific conductance	umhos/cm	897	DEP FT1200	0.1	0.1		09/16/11 11:10	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		09/16/11 11:10	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	32	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Sulfate	mg/L	240	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU4-7**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-03**						
Date/Time Collected		**09/16/11 11:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

October 4, 2011
Work Order: 1108119
Revised Report

Laboratory Report

Project Name **PNRS II**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-SU4-7**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-03**						
Date/Time Collected		**09/16/11 11:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
pH	SU	6.4	DEP FT1100	0.1	0.1		09/16/11 11:05	SDH
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		09/16/11 11:05	SDH
Specific conductance	umhos/cm	860	DEP FT1200	0.1	0.1		09/16/11 11:05	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		09/16/11 11:05	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	34	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.24	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Sulfate	mg/L	230	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU4-3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-04**						
Date/Time Collected		**09/16/11 11:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		09/16/11 11:00	SDH
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		09/16/11 11:00	SDH
Specific conductance	umhos/cm	854	DEP FT1200	0.1	0.1		09/16/11 11:00	SDH
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		09/16/11 11:00	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	38	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Sulfate	mg/L	220	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-LS3-18**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-05**						
Date/Time Collected		**09/16/11 10:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 10:55	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		09/16/11 10:55	SDH

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Sample Description		**DENIT-LS3-18**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-05**						
Date/Time Collected		**09/16/11 10:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Specific conductance	umhos/cm	737	DEP FT1200	0.1	0.1		09/16/11 10:55	SDH
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		09/16/11 10:55	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	26	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	0.57	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.26	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Sample Description		**DENIT-LS3-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-06**						
Date/Time Collected		**09/16/11 10:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		09/16/11 10:50	SDH
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		09/16/11 10:50	SDH
Specific conductance	umhos/cm	772	DEP FT1200	0.1	0.1		09/16/11 10:50	SDH
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		09/16/11 10:50	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	32	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	2.4	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Nitrite (as N)	mg/L	0.29	EPA 300.0	0.04	0.01		09/16/11 12:49	MEJ
Sample Description		**DENIT-LS3-7**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-07**						
Date/Time Collected		**09/16/11 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/16/11 10:45	SDH
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		09/16/11 10:45	SDH
Specific conductance	umhos/cm	775	DEP FT1200	0.1	0.1		09/16/11 10:45	SDH
Dissolved Oxygen	mg/L	1.6	DEP FT1500	0.1	0.1		09/16/11 10:45	SDH
Inorganics								

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Sample Description		**DENIT-LS3-7**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-07**						
Date/Time Collected		**09/16/11 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	4.6	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.37	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS3-3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-08**						
Date/Time Collected		**09/16/11 10:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		09/16/11 10:40	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		09/16/11 10:40	SDH
Specific conductance	umhos/cm	804	DEP FT1200	0.1	0.1		09/16/11 10:40	SDH
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		09/16/11 10:40	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10		09/20/11 08:00	ARM
Nitrate (as N)	mg/L	20	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.33	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-SU3-18**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-09**						
Date/Time Collected		**09/16/11 10:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/16/11 10:10	SDH
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		09/16/11 10:10	SDH
Specific conductance	umhos/cm	1,136	DEP FT1200	0.1	0.1		09/16/11 10:10	SDH
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		09/16/11 10:10	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	270	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ

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NELAP Accredited

Francis I. Daniels, Laboratory Director
Leslie C. Boardman, Q.A. Manager

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Sample Description		DENIT-SU3-18						
Matrix		Wastewater						
SAL Sample Number		1108119-09						
Date/Time Collected		09/16/11 10:10						
Collected by		Sean Harmon						
Date/Time Received		09/16/11 16:00						
Sample Description		DENIT-SU3-12						
Matrix		Wastewater						
SAL Sample Number		1108119-10						
Date/Time Collected		09/16/11 10:05						
Collected by		Sean Harmon						
Date/Time Received		09/16/11 16:00						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 10:05	SDH
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		09/16/11 10:05	SDH
Specific conductance	umhos/cm	1,091	DEP FT1200	0.1	0.1		09/16/11 10:05	SDH
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		09/16/11 10:05	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	50	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.24	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	270	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		DENIT-SU3-7						
Matrix		Wastewater						
SAL Sample Number		1108119-11						
Date/Time Collected		09/16/11 10:00						
Collected by		Sean Harmon						
Date/Time Received		09/16/11 16:00						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		09/16/11 10:00	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		09/16/11 10:00	SDH
Specific conductance	umhos/cm	1,047	DEP FT1200	0.1	0.1		09/16/11 10:00	SDH
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		09/16/11 10:00	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	270	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ

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Sample Description		**DENIT-SU3-3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-12**						
Date/Time Collected		**09/16/11 09:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.7	DEP FT1100	0.1	0.1		09/16/11 09:55	SDH
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		09/16/11 09:55	SDH
Specific conductance	umhos/cm	1,022	DEP FT1200	0.1	0.1		09/16/11 09:55	SDH
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		09/16/11 09:55	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	44	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	270	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-LS2-18**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-13**						
Date/Time Collected		**09/16/11 09:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		09/16/11 09:50	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/16/11 09:50	SDH
Specific conductance	umhos/cm	859	DEP FT1200	0.1	0.1		09/16/11 09:50	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		09/16/11 09:50	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	15 I	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	1.6	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS2-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-14**						
Date/Time Collected		**09/16/11 09:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/16/11 09:45	SDH

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Sample Description		**DENIT-LS2-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-14**						
Date/Time Collected		**09/16/11 09:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/16/11 09:45	SDH
Specific conductance	umhos/cm	892	DEP FT1200	0.1	0.1		09/16/11 09:45	SDH
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		09/16/11 09:45	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	19	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.70	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS2-7**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-15**						
Date/Time Collected		**09/16/11 09:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/16/11 09:40	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/16/11 09:40	SDH
Specific conductance	umhos/cm	860	DEP FT1200	0.1	0.1		09/16/11 09:40	SDH
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		09/16/11 09:40	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	22	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.45	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS2-3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-16**						
Date/Time Collected		**09/16/11 09:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/16/11 09:35	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/16/11 09:35	SDH
Specific conductance	umhos/cm	887	DEP FT1200	0.1	0.1		09/16/11 09:35	SDH
Dissolved Oxygen	mg/L	1.8	DEP FT1500	0.1	0.1		09/16/11 09:35	SDH

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Sample Description		**DENIT-LS2-3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-16**						
Date/Time Collected		**09/16/11 09:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Inorganics								
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	25	EPA 300.0	0.04	0.01		09/16/11 17:15	MEJ
Nitrite (as N)	mg/L	0.30	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS4-18**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-17**						
Date/Time Collected		**09/16/11 08:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.3	DEP FT1100	0.1	0.1		09/16/11 08:55	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		09/16/11 08:55	SDH
Specific conductance	umhos/cm	740	DEP FT1200	0.1	0.1		09/16/11 08:55	SDH
Dissolved Oxygen	mg/L	2.0	DEP FT1500	0.1	0.1		09/16/11 08:55	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	15 I	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	1.1	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.52	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS4-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-18**						
Date/Time Collected		**09/16/11 08:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.3	DEP FT1100	0.1	0.1		09/16/11 08:50	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		09/16/11 08:50	SDH
Specific conductance	umhos/cm	770	DEP FT1200	0.1	0.1		09/16/11 08:50	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		09/16/11 08:50	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	5.7	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ

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Sample Description		**DENIT-LS4-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-18**						
Date/Time Collected		**09/16/11 08:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Nitrite (as N)	mg/L	1.4	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS4-7**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-19**						
Date/Time Collected		**09/16/11 08:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.3	DEP FT1100	0.1	0.1		09/16/11 08:45	SDH
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		09/16/11 08:45	SDH
Specific conductance	umhos/cm	802	DEP FT1200	0.1	0.1		09/16/11 08:45	SDH
Dissolved Oxygen	mg/L	1.8	DEP FT1500	0.1	0.1		09/16/11 08:45	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	38	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	1.9	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sample Description		**DENIT-LS4-3**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-20**						
Date/Time Collected		**09/16/11 08:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		09/16/11 08:40	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		09/16/11 08:40	SDH
Specific conductance	umhos/cm	822	DEP FT1200	0.1	0.1		09/16/11 08:40	SDH
Dissolved Oxygen	mg/L	1.6	DEP FT1500	0.1	0.1		09/16/11 08:40	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	26	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.54	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-SU1-72**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-21**						
Date/Time Collected		**09/16/11 07:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 07:20	SDH
Water Temperature	°C	24.8	DEP FT1400	0.1	0.1		09/16/11 07:20	SDH
Specific conductance	umhos/cm	910	DEP FT1200	0.1	0.1		09/16/11 07:20	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		09/16/11 07:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.44	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	180	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU1-60**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-22**						
Date/Time Collected		**09/16/11 10:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 10:20	SDH
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		09/16/11 10:20	SDH
Specific conductance	umhos/cm	930	DEP FT1200	0.1	0.1		09/16/11 10:20	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		09/16/11 10:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.28	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	180	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU1-48**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-23**						
Date/Time Collected		**09/16/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								

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Sample Description		**DENIT-SU1-48**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-23**						
Date/Time Collected		**09/16/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 11:20	SDH
Water Temperature	°C	28.2	DEP FT1400	0.1	0.1		09/16/11 11:20	SDH
Specific conductance	umhos/cm	961	DEP FT1200	0.1	0.1		09/16/11 11:20	SDH
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		09/16/11 11:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	50	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.24	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	190	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU1-36**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-24**						
Date/Time Collected		**09/16/11 12:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		09/16/11 12:20	SDH
Water Temperature	°C	29.7	DEP FT1400	0.1	0.1		09/16/11 12:20	SDH
Specific conductance	umhos/cm	1,022	DEP FT1200	0.1	0.1		09/16/11 12:20	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		09/16/11 12:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	53	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	190	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU1-24**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-25**						
Date/Time Collected		**09/16/11 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		09/16/11 13:20	SDH
Water Temperature	°C	30.5	DEP FT1400	0.1	0.1		09/16/11 13:20	SDH

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DENIT-SU1-24**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-25**						
Date/Time Collected		**09/16/11 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Specific conductance	umhos/cm	1,012	DEP FT1200	0.1	0.1		09/16/11 13:20	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		09/16/11 13:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	57	EPA 410.4	25	10		09/20/11 11:04	MMF
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	200	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU1-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-26**						
Date/Time Collected		**09/16/11 14:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 14:20	SDH
Water Temperature	°C	33.1	DEP FT1400	0.1	0.1		09/16/11 14:20	SDH
Specific conductance	umhos/cm	758	DEP FT1200	0.1	0.1		09/16/11 14:20	SDH
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		09/16/11 14:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	11	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/16/11 21:36	MEJ
Sulfate	mg/L	86	EPA 300.0	0.60	0.20		09/16/11 21:36	MEJ
Sample Description		**DENIT-SU1-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-26RE1**						
Date/Time Collected		**09/16/11 14:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Inorganics								
Sulfate	mg/L	86	EPA 300.0	0.60	0.20	09/16/11 21:36	09/22/11 13:50	MEJ

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Sample Description		**DENIT-SU2-72**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-27**						
Date/Time Collected		**09/16/11 09:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		09/16/11 09:20	SDH
Water Temperature	°C	23.4	DEP FT1400	0.1	0.1		09/16/11 09:20	SDH
Specific conductance	umhos/cm	948	DEP FT1200	0.1	0.1		09/16/11 09:20	SDH
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		09/16/11 09:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	59	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	210	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU2-60**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-28**						
Date/Time Collected		**09/16/11 10:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		09/16/11 10:20	SDH
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		09/16/11 10:20	SDH
Specific conductance	umhos/cm	932	DEP FT1200	0.1	0.1		09/16/11 10:20	SDH
Dissolved Oxygen	mg/L	0.9	DEP FT1500	0.1	0.1		09/16/11 10:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	50	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	210	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU2-48**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-29**						
Date/Time Collected		**09/16/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								

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Sample Description		**DENIT-SU2-48**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-29**						
Date/Time Collected		**09/16/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
pH	SU	6.7	DEP FT1100	0.1	0.1		09/16/11 11:20	SDH
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		09/16/11 11:20	SDH
Specific conductance	umhos/cm	922	DEP FT1200	0.1	0.1		09/16/11 11:20	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		09/16/11 11:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	40	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	190	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU2-36**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-30**						
Date/Time Collected		**09/16/11 12:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		09/16/11 12:20	SDH
Water Temperature	°C	29.4	DEP FT1400	0.1	0.1		09/16/11 12:20	SDH
Specific conductance	umhos/cm	948	DEP FT1200	0.1	0.1		09/16/11 12:20	SDH
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		09/16/11 12:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	210	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU2-24**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-31**						
Date/Time Collected		**09/16/11 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		09/16/11 13:20	SDH
Water Temperature	°C	30.6	DEP FT1400	0.1	0.1		09/16/11 13:20	SDH

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Sample Description		**DENIT-SU2-24**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-31**						
Date/Time Collected		**09/16/11 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Specific conductance	umhos/cm	886	DEP FT1200	0.1	0.1		09/16/11 13:20	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		09/16/11 13:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	34	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.32	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	200	EPA 300.0	0.60	0.20		09/21/11 22:05	MEJ
Sample Description		**DENIT-SU2-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-32**						
Date/Time Collected		**09/16/11 14:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		09/16/11 14:20	SDH
Water Temperature	°C	32.7	DEP FT1400	0.1	0.1		09/16/11 14:20	SDH
Specific conductance	umhos/cm	789	DEP FT1200	0.1	0.1		09/16/11 14:20	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		09/16/11 14:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	22 I	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	8.4	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sulfate	mg/L	120	EPA 300.0	0.60	0.20		09/22/11 11:12	MEJ
Sample Description		**DENIT-LS1-72**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-33**						
Date/Time Collected		**09/16/11 09:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/16/11 09:20	SDH
Water Temperature	°C	23.2	DEP FT1400	0.1	0.1		09/16/11 09:20	SDH
Specific conductance	umhos/cm	645	DEP FT1200	0.1	0.1		09/16/11 09:20	SDH
Dissolved Oxygen	mg/L	0.9	DEP FT1500	0.1	0.1		09/16/11 09:20	SDH

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Sample Description		**DENIT-LS1-72**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-33**						
Date/Time Collected		**09/16/11 09:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Inorganics								
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.29	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-LS1-60**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-34**						
Date/Time Collected		**09/16/11 10:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/16/11 10:20	SDH
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		09/16/11 10:20	SDH
Specific conductance	umhos/cm	658	DEP FT1200	0.1	0.1		09/16/11 10:20	SDH
Dissolved Oxygen	mg/L	1.6	DEP FT1500	0.1	0.1		09/16/11 10:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10		09/23/11 09:00	MMF
Nitrate (as N)	mg/L	2.4	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.27	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-LS1-48**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-35**						
Date/Time Collected		**09/16/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/16/11 11:20	SDH
Water Temperature	°C	27.5	DEP FT1400	0.1	0.1		09/16/11 11:20	SDH
Specific conductance	umhos/cm	704	DEP FT1200	0.1	0.1		09/16/11 11:20	SDH
Dissolved Oxygen	mg/L	1.9	DEP FT1500	0.1	0.1		09/16/11 11:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/23/11 09:00	MMF
Nitrate (as N)	mg/L	6.5	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ

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Sample Description		**DENIT-LS1-48**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-35**						
Date/Time Collected		**09/16/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Nitrite (as N)	mg/L	0.46	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-LS1-36**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-36**						
Date/Time Collected		**09/16/11 12:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		09/16/11 12:20	SDH
Water Temperature	°C	29.5	DEP FT1400	0.1	0.1		09/16/11 12:20	SDH
Specific conductance	umhos/cm	775	DEP FT1200	0.1	0.1		09/16/11 12:20	SDH
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		09/16/11 12:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	9.5	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.64	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-LS1-24**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-37**						
Date/Time Collected		**09/16/11 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 13:20	SDH
Water Temperature	°C	30.9	DEP FT1400	0.1	0.1		09/16/11 13:20	SDH
Specific conductance	umhos/cm	730	DEP FT1200	0.1	0.1		09/16/11 13:20	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		09/16/11 13:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.69	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ

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Sample Description		**DENIT-LS1-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-38**						
Date/Time Collected		**09/16/11 14:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		09/16/11 14:20	SDH
Water Temperature	°C	32.1	DEP FT1400	0.1	0.1		09/16/11 14:20	SDH
Specific conductance	umhos/cm	723	DEP FT1200	0.1	0.1		09/16/11 14:20	SDH
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		09/16/11 14:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	30	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	14	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.39	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-GL1-72**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-39**						
Date/Time Collected		**09/16/11 09:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		09/16/11 09:20	SDH
Water Temperature	°C	24.7	DEP FT1400	0.1	0.1		09/16/11 09:20	SDH
Specific conductance	umhos/cm	661	DEP FT1200	0.1	0.1		09/16/11 09:20	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		09/16/11 09:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	50	EPA 410.4	25	10		09/23/11 09:00	MMF
Nitrate (as N)	mg/L	0.26	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-GL1-60**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-40**						
Date/Time Collected		**09/16/11 10:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		09/16/11 10:20	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		09/16/11 10:20	SDH

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Sample Description		**DENIT-GL1-60**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-40**						
Date/Time Collected		**09/16/11 10:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Specific conductance	umhos/cm	693	DEP FT1200	0.1	0.1		09/16/11 10:20	SDH
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		09/16/11 10:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	44	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.24	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-GL1-48**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-41**						
Date/Time Collected		**09/16/11 11:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		09/16/11 11:20	SDH
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		09/16/11 11:20	SDH
Specific conductance	umhos/cm	726	DEP FT1200	0.1	0.1		09/16/11 11:20	SDH
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		09/16/11 11:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	59	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-GL1-36**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-42**						
Date/Time Collected		**09/16/11 12:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		09/16/11 12:20	SDH
Water Temperature	°C	29.2	DEP FT1400	0.1	0.1		09/16/11 12:20	SDH
Specific conductance	umhos/cm	751	DEP FT1200	0.1	0.1		09/16/11 12:20	SDH
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		09/16/11 12:20	SDH
Inorganics								

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Sample Description		**DENIT-GL1-36**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-42**						
Date/Time Collected		**09/16/11 12:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Chemical Oxygen Demand	mg/L	55	EPA 410.4	25	10		09/22/11 08:00	ARM
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-GL1-24**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-43**						
Date/Time Collected		**09/16/11 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		09/16/11 13:20	SDH
Water Temperature	°C	30.6	DEP FT1400	0.1	0.1		09/16/11 13:20	SDH
Specific conductance	umhos/cm	740	DEP FT1200	0.1	0.1		09/16/11 13:20	SDH
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		09/16/11 13:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	61	EPA 410.4	25	10		09/23/11 09:00	MMF
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Sample Description		**DENIT-GL1-12**						
Matrix		**Wastewater**						
SAL Sample Number		**1108119-44**						
Date/Time Collected		**09/16/11 14:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**09/16/11 16:00**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		09/16/11 14:20	SDH
Water Temperature	°C	31.7	DEP FT1400	0.1	0.1		09/16/11 14:20	SDH
Specific conductance	umhos/cm	726	DEP FT1200	0.1	0.1		09/16/11 14:20	SDH
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		09/16/11 14:20	SDH
Inorganics								
Chemical Oxygen Demand	mg/L	160	EPA 410.4	25	10		09/23/11 09:00	MMF
Nitrate (as N)	mg/L	0.26	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		09/17/11 10:40	MEJ

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11603 - Ion Chromatography 300.0 Prep										
Blank (BI11603-BLK1)					Prepared & Analyzed: 09/16/11					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11603-BS1)					Prepared & Analyzed: 09/16/11					
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7		95	85-115		
Nitrite (as N)	1.30	0.04	0.01	mg/L	1.4		93	85-115		
LCS Dup (BI11603-BSD1)					Prepared & Analyzed: 09/16/11					
Nitrite (as N)	1.30	0.04	0.01	mg/L	1.4		93	85-115	0	200
Nitrate (as N)	1.63	0.04	0.01	mg/L	1.7		96	85-115	0.6	200
Matrix Spike (BI11603-MS1)		**Source: 1108350-01**			Prepared & Analyzed: 09/16/11					
Nitrate (as N)	1.96	0.04	0.01	mg/L	1.7	0.511	85	85-115		
Nitrite (as N)	1.37	0.04	0.01	mg/L	1.4	ND	98	85-115		
Matrix Spike (BI11603-MS2)		**Source: 1107996-05**			Prepared & Analyzed: 09/16/11					
Nitrate (as N)	4.87	0.04	0.01	mg/L	1.7	3.21	98	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4	ND	102	85-115		
Batch BI11632 - Ion Chromatography 300.0 Prep										
Blank (BI11632-BLK1)					Prepared & Analyzed: 09/16/11					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BI11632-BS1)					Prepared & Analyzed: 09/16/11					
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
Nitrite (as N)	1.41	0.04	0.01	mg/L	1.4		101	85-115		
Sulfate	9.21	0.60	0.20	mg/L	9.0		102	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11632 - Ion Chromatography 300.0 Prep										
LCS Dup (BI11632-BSD1)					Prepared & Analyzed: 09/16/11					
Nitrite (as N)	1.41	0.04	0.01	mg/L	1.4		101	85-115	0	200
Sulfate	9.13	0.60	0.20	mg/L	9.0		101	85-115	0.9	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0	200
Matrix Spike (BI11632-MS1)		**Source: 1108119-16**			Prepared & Analyzed: 09/16/11					
Sulfate	64.6	0.60	0.20	mg/L	9.0	55.6	100	85-115		
Nitrite (as N)	1.63	0.04	0.01	mg/L	1.4	0.305	95	85-115		
Nitrate (as N)	25.6 +O	0.04	0.01	mg/L	1.7	25.3	18	85-115		
Matrix Spike (BI11632-MS2)		**Source: 1108119-26**			Prepared & Analyzed: 09/16/11					
Sulfate	104 +O	0.60	0.20	mg/L	9.0	85.7	203	85-115		
Nitrate (as N)	7.72 +O	0.04	0.01	mg/L	1.7	11.4	NR	85-115		
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4	ND	100	85-115		
Batch BI11702 - Ion Chromatography 300.0 Prep										
Blank (BI11702-BLK1)					Prepared & Analyzed: 09/17/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11702-BS1)					Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Nitrate (as N)	1.57	0.04	0.01	mg/L	1.7		92	85-115		
LCS Dup (BI11702-BSD1)					Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115	0	200
Nitrate (as N)	1.60	0.04	0.01	mg/L	1.7		94	85-115	2	200

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11702 - Ion Chromatography 300.0 Prep										
Matrix Spike (BI11702-MS1)		**Source: 1108119-33**			Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.46	0.04	0.01	mg/L	1.4	ND	104	85-115		
Nitrate (as N)	1.85	0.04	0.01	mg/L	1.7	0.286	92	85-115		
Matrix Spike (BI11702-MS2)		**Source: 1108119-43**			Prepared & Analyzed: 09/17/11					
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Nitrate (as N)	1.80	0.04	0.01	mg/L	1.7	0.222	93	85-115		
Batch BI11703 - Ion Chromatography 300.0 Prep										
Blank (BI11703-BLK1)					Prepared & Analyzed: 09/17/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BI11703-BS1)					Prepared & Analyzed: 09/17/11					
Nitrate (as N)	1.59	0.04	0.01	mg/L	1.7		94	85-115		
Nitrite (as N)	1.32	0.04	0.01	mg/L	1.4		94	85-115		
LCS Dup (BI11703-BSD1)					Prepared & Analyzed: 09/17/11					
Nitrate (as N)	1.61	0.04	0.01	mg/L	1.7		95	85-115	1	200
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115	2	200
Matrix Spike (BI11703-MS1)		**Source: 1108308-01**			Prepared & Analyzed: 09/17/11					
Nitrate (as N)	2.66	0.04	0.01	mg/L	1.7	0.866	106	85-115		
Nitrite (as N)	1.42	0.04	0.01	mg/L	1.4	ND	101	85-115		
Batch BI11931 - Ion Chromatography 300.0 Prep										
Blank (BI11931-BLK1)					Prepared & Analyzed: 09/19/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI11931 - Ion Chromatography 300.0 Prep										
LCS (BI11931-BS1)					Prepared & Analyzed: 09/19/11					
Nitrate (as N)	1.60	0.04	0.01	mg/L	1.7		94	85-115		
LCS Dup (BI11931-BSD1)					Prepared & Analyzed: 09/19/11					
Nitrate (as N)	1.61	0.04	0.01	mg/L	1.7		95	85-115	0.6	200
Matrix Spike (BI11931-MS1)		**Source: 1108431-01**			Prepared & Analyzed: 09/19/11					
Nitrate (as N)	18.2 +O	0.04	0.01	mg/L	1.7	15.6	153	85-115		
Matrix Spike (BI11931-MS2)		**Source: 1107976-01**			Prepared & Analyzed: 09/19/11					
Nitrate (as N)	18.2	0.04	0.01	mg/L	17	2.94	90	85-115		
Batch BI12004 - COD prep										
Blank (BI12004-BLK1)					Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BI12004-BS1)					Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	50	25	10	mg/L	50		100	90-110		
Matrix Spike (BI12004-MS1)		**Source: 1107977-01**			Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	69	25	10	mg/L	50	24	90	85-115		
Matrix Spike Dup (BI12004-MSD1)		**Source: 1107977-01**			Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	77	25	10	mg/L	50	24	106	85-115	11	32
Batch BI12038 - COD prep										
Blank (BI12038-BLK1)					Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						

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Batch BI12038 - COD prep										
LCS (BI12038-BS1)					Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	50	25	10	mg/L	50		100	90-110		
Matrix Spike (BI12038-MS1)		**Source: 1108119-09**			Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	90	25	10	mg/L	50	46	88	85-115		
Matrix Spike Dup (BI12038-MSD1)		**Source: 1108119-09**			Prepared & Analyzed: 09/20/11					
Chemical Oxygen Demand	90	25	10	mg/L	50	46	88	85-115	0	32
Batch BI12106 - Ion Chromatography 300.0 Prep										
Blank (BI12106-BLK1)					Prepared & Analyzed: 09/21/11					
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BI12106-BS1)					Prepared & Analyzed: 09/21/11					
Sulfate	8.46	0.60	0.20	mg/L	9.0		94	85-115		
LCS Dup (BI12106-BSD1)					Prepared & Analyzed: 09/21/11					
Sulfate	8.53	0.60	0.20	mg/L	9.0		95	85-115	0.8	200
Matrix Spike (BI12106-MS1)		**Source: 1108119-21**			Prepared & Analyzed: 09/21/11					
Sulfate	276	0.60	0.20	mg/L	90	178	109	85-115		
Matrix Spike (BI12106-MS2)		**Source: 1108119-31**			Prepared & Analyzed: 09/21/11					
Sulfate	290	0.60	0.20	mg/L	90	198	102	85-115		
Batch BI12141 - Ion Chromatography 300.0 Prep										
Blank (BI12141-BLK1)					Prepared & Analyzed: 09/22/11					
Sulfate	0.20 U	0.60	0.20	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12141 - Ion Chromatography 300.0 Prep										
LCS (BI12141-BS1)					Prepared & Analyzed: 09/22/11					
Sulfate	8.79	0.60	0.20	mg/L	9.0		98	85-115		
LCS Dup (BI12141-BSD1)					Prepared & Analyzed: 09/22/11					
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115	4	200
Matrix Spike (BI12141-MS1)		**Source: 1108418-01**			Prepared & Analyzed: 09/22/11					
Sulfate	952 +O	0.60	0.20	mg/L	900	203	83	85-115		
Matrix Spike (BI12141-MS2)		**Source: 1108407-03**			Prepared & Analyzed: 09/22/11					
Sulfate	25.3	0.60	0.20	mg/L	9.0	17.2	90	85-115		
Batch BI12203 - COD prep										
Blank (BI12203-BLK1)					Prepared & Analyzed: 09/22/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BI12203-BS1)					Prepared & Analyzed: 09/22/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BI12203-MS1)		**Source: 1108119-26**			Prepared & Analyzed: 09/22/11					
Chemical Oxygen Demand	63	25	10	mg/L	50	18	90	85-115		
Matrix Spike Dup (BI12203-MSD1)		**Source: 1108119-26**			Prepared & Analyzed: 09/22/11					
Chemical Oxygen Demand	61	25	10	mg/L	50	18	86	85-115	3	32
Batch BI12335 - COD prep										
Blank (BI12335-BLK1)					Prepared & Analyzed: 09/23/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

October 4, 2011
Work Order: 1108119
Revised Report

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BI12335 - COD prep										
LCS (BI12335-BS1)					Prepared & Analyzed: 09/23/11					
Chemical Oxygen Demand	50	25	10	mg/L	50		100	90-110		
Matrix Spike (BI12335-MS1)		**Source: 1107979-01**			Prepared & Analyzed: 09/23/11					
Chemical Oxygen Demand	71	25	10	mg/L	50	28	86	85-115		
Matrix Spike Dup (BI12335-MSD1)		**Source: 1107979-01**			Prepared & Analyzed: 09/23/11					
Chemical Oxygen Demand	71	25	10	mg/L	50	28	86	85-115	0	32

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1108119

Client Name	Contact / Phone:
Hazan and Sawyer	Josephin Edeback-Hirst 813-630-4498
Project Name / Location	jedeback@hazanandsawyer.com
PNRS II SE#7 Wastewater System Analyses	
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	PARAMETER / CONTAINER DESCRIPTION: 125mL P, H_2SO_4 NOx, COD	125mL P, Cool SO_4, NO_2, NO_3	125 ml P, Cool NO_2, NO_3			Field DO	Field Temp	Field Cond	Field pH	No. of Containers (Total per each location)
01	DENIT-SU4-18	09/6/11	1115	ww		X	1	1				1.23	27.5	1008	6.7	-254.3
02	DENIT-SU4-12	091611	1110	ww		X	1	1				1.36	27.3	897	6.4	-238.4
03	DENIT-SU4-7	091611	1105	ww		X	1	1				0.96	27.1	860	6.4	-237.1
04	DENIT-SU4-3	091611	1100	ww		X	1	1				1.26	27.0	854	6.3	-216.5
05	DENIT-LS3-18	091611	1055	ww		X	1		1			0.87	26.8	737	6.9	-211.0
06	DENIT-LS3-12	091611	1050	ww		X	1		1			0.81	27.1	772	6.8	-168.5
07	DENIT-LS3-7	091611	1045	ww		X	1		1			1.63	27.1	775	7.0	-125.3
08	DENIT-LS3-3	091611	1040	ww		X	1		1			1.13	26.9	804	6.8	-69.9
09	DENIT-SU3-18	091611	1010	ww		X	1	1				0.70	27.2	1136	7.0	-286.5
10	DENIT-SU3-12	091611	1005	ww		X	1	1				0.68	26.6	1091	6.9	-274.4
11	DENIT-SU3-7	091611	1000	ww		X	1	1			SA	0.86	26.8	1097	6.8	-277.5
12	DENIT-SU3-3	091611	0955	ww		X	1	1			SA	~~0.85~~ 0.61	26.7	1022	6.7	-260.1

Containers Prepared/ Relinquished:	Date/Time: 1140 9/12/11	Received:	Date/Time: 1140 9/12/11	Seal intact? Y N N/A
Relinquished:	Date/Time: 1600 9/16/11	Received:	Date/Time:	Samples intact upon arrival? Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Received on ice? Temp_____ Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Proper preservatives indicated? Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Rec'd within holding time? Y N N/A
				Volatiles rec'd w/out headspace? Y N N/A
				Proper containers used? Y N N/A

Instructions / Remarks

1108119

Limited sample volume.

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1108119

Client Name	Contact / Phone:
Hazan and Sawyer	Josephin Edeback-Hirst 813-630-4498
Project Name / Location	jedeback@hazanandsawyer.com
PNRS II SE#7 Wastewater System Analyses	
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	PARAMETER / CONTAINER DESCRIPTION: 125mL P, H_2SO_4 NOx, COD	125mL P, Cool SO_4, NO_2, NO_3	125mL P, Cool NO_2, NO_3			Field DO	Field Temp	Field Cond	Field pH	No. of Containers (Total per each location)
13	DENIT-LS2-18	091611	0950	ww		x	1		|			1.03	26.3	859	7.1	-9.6
14	DENIT-LS2-12	091611	0945	ww		x	1		|			1.07	26.3	892	7.2	-10.1
15	DENIT-LS2-7	091611	0940	ww		x	1		|			1.34	26.3	860	7.2	-17.2
16	DENIT-LS2-3	091611	0935	ww		x	1		|			1.85	26.7	887	7.2	-23.4
17	DENIT-LS4-18	091611	0855	ww		x	1		|			1.95	26.9 SH	740	7.3	-119.7
18	DENIT-LS4-12	091611	0850	ww		x	1		|			1.39	26.8	770	7.3	-77.1 SH
19	DENIT-LS4-7	091611	0845	ww		x	1		|			1.82	26.7	802	7.3	-51.8
20	DENIT-LS4-3	091611	0840	ww		x	1		|			1.56	26.0	822	7.2	-100.2
21	DENIT-SU1-72	091611	0820 SH	ww		x	1	1				1.21	24.8	910	6.9	-248.2
22	DENIT-SU1-~~30~~ 60 SH	091611	1020	ww		x	1	1				1.35	26.2	930	6.9	-257.5
23	DENIT-SU1-~~48~~ 48 SH	091611	1120	ww		x	1	1				0.59	28.2	961	6.9	-288.1
24	DENIT-SU1-36	091611	1220	ww		x	1	1				0.97	29.7	1022	6.8	-265.7

Containers Prepared/ Relinquished:	Date/Time: 1140 9/12/11	Received:	Date/Time: 1140 9/12/11	Seal intact? Y N (N/A)
Relinquished:	Date/Time: 1600 91611	Received:	Date/Time:	Samples intact upon arrival? Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Received on ice? Temp_____ Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Proper preservatives indicated? Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Rec'd within holding time? Y N N/A
				Volatiles rec'd w/out headspace? Y N (N/A)
				Proper containers used? Y N N/A

Instructions / Remarks

1108119

Limited sample volume.

SU1-60 — 1020
to Temp Cond pH ORP
1.35 26.2 930 6.9 -257.5

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1108119

Client Name	Contact / Phone:
Hazan and Sawyer	Josephin Edeback-Hirst 813-630-4498
Project Name / Location: PNRS II SE#7 Wastewater System Analyses	jedeback@hazanandsawyer.com
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mL P, H_2SO_4 NOx COD TKN	125mL P, Cool SO_4, NO_2, NO_3	125ml P, Cool NO_2, NO_3			Field DO	Field Temp	Field Cond	Field pH	No. of Containers (Total per each location)
25	DENIT-SU1-24	091611	1320	WW		X	1	1				0.97	30.5	1012	6.8	-278.0
26	DENIT-SU1-12	091611	1420 0920	WW		X	1	1				1.31	33.1	758	6.9	-111.4
27	DENIT-SU2-72	091611	~~0820~~ SH	WW		X	1	1				1.32	23.4	948	6.8	-260.1
28	DENIT-SU2-60	091611	1020	WW		X	1	1				0.93	25.9	932	6.6	-264.1
29	DENIT-SU2-48	091611	1120	WW		X	1	1				1.36	27.0	922	6.7	-260.4
30	DENIT-SU2-36	091611	1220	WW		X	1	1				0.60	29.4	948	6.6	-270.6
31	DENIT-SU2-24	091611	1320	WW		X	1	1				0.96	30.6	886	6.6	-248.0
32	DENIT-SU2-12	091611	1420 0920	WW		X	1	1				1.37	32.7	789	6.6	-209.2
33	DENIT-LS1-72	091611	~~0820~~ SH	WW		X	1		1			0.88	23.2	645	7.0	-289.1
34	DENIT-LS1-60	09611	1020	WW		X	1		1			SH ~~0.93~~	~~25.9~~	~~932~~	~~6.6~~	~~-264.1~~
35	DENIT-LS1-48	091611	1120	WW		X	1		1			1.93	27.5	704	7.0	-154.1
36	DENIT-LS1-36	091611	1220	WW		X	1		1			0.48	29.5	775	7.0	-159.1

Containers Prepared/ Relinquished:	Date/Time: 1140 9/12/11	Received:	Date/Time: 1140 SH 9/12/11	Seal intact? Y N (N/A)
Relinquished:	Date/Time: 1600 91611	Received:	Date/Time:	Samples intact upon arrival? Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Received on ice? Temp_____ Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Proper preservatives indicated? Y N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Rec'd within holding time? Y N N/A
				Volatiles rec'd w/out headspace? Y N (N/A)
				Proper containers used? Y N N/A

Instructions / Remarks

1108119

Limited sample volume.

LS1-60

DO	Tem	CON	PH	ORP
1.63	25.6	658	7.0	-178.4

SOUTHERN ANALYTICAL LABORATORIES, INC.

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SAL Project No. 1108119

Client Name	Contact / Phone:
Hazan and Sawyer	Josephin Edeback-Hirst 813-630-4498
Project Name / Location: PNRS II SE#7 Wastewater System Analyses	jedeback@hazanandsawyer.com
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mL P, H_2SO_4 NO$_3$, COD TOC	125mL P, Cool SO_4, NO_2, NO_3 TOC				Field DO	Field Temp	Field Cond	Field pH	No. of Containers (Total per each location)
37	DENIT-LS1-24	091611	1320	ww		x	1	1				0.95	30.9	730	6.9	-139.7
38	DENIT-LS1-12	091611	1420	ww		x	1	1				1.06	32.1	723	6.9	-145.7
39	DENIT-GL1-72	091611	~~0820~~ 0920 SH	ww		x	1	1				1.40	24.7	661	6.4	-214.8
40	DENIT-GL1-60	091611	1020	ww		x	1	1				1.28	26.3	693	6.3	-233.3
41	DENIT-GL1-48	091611	1120	ww		x	1	1				0.78	27.4	726	6.3	-267.5
42	DENIT-GL1-36	091611	1220	ww		x	1	1				0.51	29.2	~~698~~ 737 SH	6.3	-266.2 SH
43	DENIT-GL1-24	091611	1320	ww		x	1	1				0.69	30.6	740	6.3	-245.0
44	DENIT-GL1-12	091611	1420	ww		x	1	1				0.52	31.7	726	6.2	-235.6

Containers Prepared/ Relinquished: PR	Date/Time: 1140 9/12/11	Received:	Date/Time: 1140 9/12/11	Seal intact? Y N (N/A)
Relinquished:	Date/Time: 1600 9/6/11	Received:	Date/Time:	Samples intact upon arrival? (Y) N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Received on ice? Temp_____ (Y) N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Proper preservatives indicated? (Y) N N/A
Relinquished:	Date/Time:	Received:	Date/Time:	Rec'd within holding time? (Y) N N/A
				Volatiles rec'd w/out headspace? Y N (N/A)
				Proper containers used? (Y) N N/A

Instructions / Remarks

1108119

Limited sample volume.

Chain of Custody