1.0 PROPOSED DRAINAGE PLAN

The overall acreage of K-Area is approximately 180 acres (See Stormwater Drainage Plan). In order to meet the DHEC requirements for proposed improvements, the site will be portioned into four drainage areas with four retention basins. The total drainage areas to be disturbed are approximately 11.4 acres (See Table 1).

1.1 OUTFALL K-01

The proposed area that will be draining to Outfall K-01 will be approximately 1.50 acres (See Table 1). The largest proposed structure contributing to this area is the Administration Building. There are several other proposed buildings and structures contributing to the flow in addition to the existing structures. The total area for K-01 is approximately 16.50 acres, therefore a new retention basin will be required. This new basin will be designed to control sediment from construction activities and to reduce the pollutants before final discharge to Pen Branch. Outfall K-01 would have to be re-permitted for the Industrial Stormwater General Permit. The existing contributors of zinc would involve the strategic application of soil amendments within the drainage area upstream of the outfall to sequester the zinc pollutant constituents within the soil column. The approximate area required for this treatment is 5 acres.

1.2 OUTFALL K-02

The proposed area that will be disturbed draining to Outfall K-02 is approximately 2.55 acres. The proposed drainage runoff contributing from this area is an asphalt paved parking lot. The total area contributing to Outfall K-02 is 12.6 acres. A new retention basin is proposed for this drainage area. This new basin will be designed to control sediment from construction activities and to reduce the pollutants before final discharge to Pen Branch. Outfall K-02 would have to be re-permitted for the Industrial Stormwater General Permit. The existing contributors of zinc would involve the strategic application of soil amendments within the drainage area upstream of the outfall to sequester the zinc pollutant constituents within the soil column. The approximate area required for this treatment is 5 acres. SCDHEC has directed SRS to apply for an individual Industrial Wastewater Permit for this outfall based upon its analysis of the discharge data. The expected end-state of Outfall K-02 would be its regulation as an individually permitted outfall under the Industrial Wastewater Permit.

Sampling data

K-02

Parameter	Units	Grab	Comp	Grab	Comp
pH	su	7.3		6.9	
COD	mg/L	23	19	16	ND
TSS	mg/L	61	49	9	11
Oil & Grease	mg/L	7.4		ND	
Cadmium	ug/L	0.136	0.138	ND	0.1
Copper	ug/L	ND	ND	ND	ND
Iron	ug/L	2631	1993	238.4	796.2
Nickel	ug/L	ND	ND	ND	ND
Zinc	ug/L	145.1	71.2	173.1	45.4
Sample collection date		02/06/08	02/07/08	12/10/2008	12/11/2008

1.3 OUTFALL K-04

The proposed area that will be disturbed draining to Outfall K-04 is approximately 6.12 acres. The largest contributors to this area are the Glovebox Fabrication Facility, Parking Lot, and Sand Filter Building. The total drainage area contributing to this Outfall K-04 is approximately 21.8 acres. A new retention basin will be designed to control sediment from construction activities and to reduce the pollutants before final discharge to Pen Branch. The existing contributors of pollutants would involve the strategic application of soil amendments within the drainage area 1500 feet downstream of the outfall to sequester the pollutant constituents within the soil column. The approximate area required for this treatment is 5 acres. This Outfall K-04 would continue regulations under the Industrial Stormwater General Permit.

1.4 OUTFALL K-New

The proposed drainage area that will be disturbed draining to this new retention basin is approximately 1.24 acres. The proposed facilities contributing from this area include a new substation, new switchgear building, new diesel storage, new utility building, new cooling tower, and new roads. The total area including existing facilities is approximately 7.80 acres. A new retention basin will be designed to control sediment from construction activities. This Outfall will require a new discharge permit with SCDHEC.

Table 1

Estimated PDCF Disturbed Area		
Outfall	**K-01**	
	SqFt	Ac Ea

Firewater Pumphouse	1583	0.04
Firewater Tank	5026	0.12
Personnel Building	5760	0.13
Admin Building	31590	0.73
Waste Staging Building	3186	0.07
Rdway	16667	0.38
Total	63812	**1.46**
Outfall	**K-02**	
	SqFt	Ac Ea
Admin Area Parking Lot	110930	2.55
Rdway	0	0.00
Total	110930	**2.55**
Outfall	**K-NEW**	
	SqFt	Ac Ea
New Substation	6961	0.16
New Switchgear Building	2425	0.06
Diesel Storage	2546	0.06
Utility Building	23695	0.54
Cooling Tower	1588	0.04
Rdway	16667	0.38
Total	53882	**1.24**
Outfall	**K-04**	
	SqFt	Ac Ea
Glovebox Fabrication Facility	110500	2.54
Adjacent Parking Lot	64430	1.48
Nitrogen & Argon Storage	3994	0.09
Sand Filter	55328	1.27
Emergency Generator A	3200	0.07
Diesel Storage	1176	0.03
Emergency Generator B	3200	0.07
Fan House	8184	0.19
Rdway	16667	0.38
Total	266679	**6.12**
Total All	**495303**	**11.37**

Entire Site Estimated 180 Ac