APPLICANT'S NAME: NORTHROP GRUMMAN SPACE AND MISSION SYSTEMS CORP.

FACILITY PERMIT ID# 800408

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Title V Revision:
Application No. 544392

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description: (Previous Application 502641)

PROCESS 1: CONTROL EQUIPMENT					
Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
SCRUBBER, PACKED BED, HARRINGTON, MODEL NO. HPH 78-4, WIDTH: 8FT, DEPTH: 7FT; LENGTH 6FT 3IN, WITH A 4FT PACKING DEPTH, A 30-HP EXHAUST FAN AND THREE 2-HP RECIRCULATION PUMPS. Reference A/N ~~502641~~544394	C-6	E419, D420, E421, E422, E423, E424, D425, D427 D428, D429, D430, D431, D432, D433, D434, D435, D438, D439, D440, D441, D442, E479, D501, D502, D503, D505, E506, D525, D537, D573, D595, D597, **D426 ADD**			C8.3, C8.9, D90.1, E158.1, E159.1,K67.3

Conditions:

C8.3 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE FLOW RATE BEING MONITORED, AS INDICATED BELOW, IS NOT LESS THAN 150 GPM.

To comply with this condition, the operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the recirculating scrubbing solution.

C8.9 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE pH BEING MONITORED, AS INDICATED BELOW, IS NOT LESS THAN 8 OF THE pH SCALE

To comply with this condition, the operator shall monitor and record the pH as specified in condition D90.1.

D90.1 THE OPERATOR SHALL PERIODICALLY MONITOR THE pH OF THE SCRUBBING SOLUTION ACCORDING TO THE FOLLOWING SPECIFICATIONS:

The operator shall use litmus paper or a portable pH analyzer to monitor the parameter.

The operator shall monitor once every day provided any equipment served by this control system is in operation.

E158.1 THE OPERATOR SHALL MAINTAIN A CONTINUOUS OVERFLOW OF WATER FROM THE SCRUBBER SUMP TO PREVENT THE BUILD UP OF CONTAMINATION.

E159.1 THE OPERATOR SHALL MAINTAIN INSPECTION PORTS WHICH, WHEN OPENED, ALLOW THE OBSERVATION OF THE SPRAY NOZZLES AND SCRUBBING SOLUTION BEING SPRAYED ON THE PACKING.

K67.3 THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETERS OR ITEMS:

pH of scrubbing solution on a daily basis.

Flow rate of recirculating scrubbing solution on a daily basis.

SECTION "H"

Equipment Description: (Previous Application 537102)

PROCESS 1: CONTROL EQUIPMENT					
Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
SCRUBBER, FS21, HARRINGTON, WITH A MIST ELIMINATOR SECTION A/N: ~~537102~~544407	C-160	D189, D211, D371, D373, D374, D375, D378, D382, D386, D388, D390, D391, D394, D395, D403, D404, D478, D574, D613, **D97 Add** **D462 ADD** **D511 ADD** **D516 ADD** **D617 ADD** **D623 ADD**		PM: (9) [RULE 404, 2-7-1986]	C8.3, C8.9, D90.1, E158.1, E159.1, I331.1, K67.3

Conditions:

C8.3 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE FLOW RATE BEING MONITORED, AS INDICATED BELOW, IS NOT LESS THAN 150 GPM.

To comply with this condition, the operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the recirculating scrubbing solution.

C8.9 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE pH BEING MONITORED, AS INDICATED BELOW, IS NOT LESS THAN 8 OF THE pH SCALE

To comply with this condition, the operator shall monitor and record the pH as specified in condition D90.1.

D90.1 THE OPERATOR SHALL PERIODICALLY MONITOR THE pH OF THE SCRUBBING SOLUTION ACCORDING TO THE FOLLOWING SPECIFICATIONS:

The operator shall use litmus paper or a portable pH analyzer to monitor the parameter.

The operator shall monitor once every day provided any equipment served by this control system is in operation.

E158.1 THE OPERATOR SHALL MAINTAIN A CONTINUOUS OVERFLOW OF WATER FROM THE SCRUBBER SUMP TO PREVENT THE BUILD UP OF CONTAMINATION.

E159.1 THE OPERATOR SHALL MAINTAIN INSPECTION PORTS WHICH, WHEN OPENED, ALLOW THE OBSERVATION OF THE SPRAY NOZZLES AND SCRUBBING SOLUTION BEING SPRAYED ON THE PACKING.

I331.1 THE CONDITIONS AND REQUIREMENTS FOR THIS DEVICE IN SECTION H SHALL TAKE EFFECT, AND SHALL SUPERSEDE THOSE IN SECTION D, WHEN THE MODIFICATIONS AUTHORIZED IN SECTION H ARE COMPLETED. THE OPERATOR SHALL NOTIFY THE AQMD WHEN THE MODIFICATIONS ARE COMPLETED.

K67.3 THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETERS OR ITEMS:

pH of scrubbing solution on a daily basis.

Flow rate of recirculating scrubbing solution on a daily basis.

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description: (Previous Application 537100)

PROCESS 1: CONTROL EQUIPMENT					
Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
SCRUBBER, PACKED BED, HARRINGTON, MODEL NO. HPH 66-4, LENGTH: 10FT 5IN; WIDTH: 7FT 3IN; HEIGHT: 8FT 2IN; WITH A 4FT PACKING DEPTH, A 20-HP EXHAUST FAN AND THREE 2-HP RECIRCULATION PUMPS. A/N: ~~537100~~544396	C-232	D349, D372, D383, D397, D398, D406, D407, D447, D477, D507, D508, D509, D525, D540 D552, D584, D596, **D513 Add** **D615 Add** **D616 Add** **D621 Add** **D622 Add** **D624 Add**		PM: (9) [Rule 404, 2-7-1986]	C8.1, C8.9, D90.1, E158.1, E159.1, I331.1, K67.3

Conditions:

C8.1 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE FLOW RATE BEING MONITORED, AS INDICATED BELOW, IS NOT LESS THAN 100 GPM.

To comply with this condition, the operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the recirculating scrubbing solution.

C8.9 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE pH BEING MONITORED, AS INDICATED BELOW, IS NOT LESS THAN 8 OF THE pH SCALE

To comply with this condition, the operator shall monitor and record the pH as specified in condition D90.1.

D90.1 THE OPERATOR SHALL PERIODICALLY MONITOR THE pH OF THE SCRUBBING SOLUTION ACCORDING TO THE FOLLOWING SPECIFICATIONS:

The operator shall use litmus paper or a portable pH analyzer to monitor the parameter.

The operator shall monitor once every day provided any equipment served by this control system is in operation.

E158.1 THE OPERATOR SHALL MAINTAIN A CONTINUOUS OVERFLOW OF WATER FROM THE SCRUBBER SUMP TO PREVENT THE BUILD UP OF CONTAMINATION.

E159.1 THE OPERATOR SHALL MAINTAIN INSPECTION PORTS WHICH, WHEN OPENED, ALLOW THE OBSERVATION OF THE SPRAY NOZZLES AND SCRUBBING SOLUTION BEING SPRAYED ON THE PACKING.

I331.1 THE CONDITIONS AND REQUIREMENTS FOR THIS DEVICE IN SECTION H SHALL TAKE EFFECT, AND SHALL SUPERSEDE THOSE IN SECTION D, WHEN THE MODIFICATIONS AUTHORIZED IN SECTION H ARE COMPLETED. THE OPERATOR SHALL NOTIFY THE AQMD WHEN THE MODIFICATIONS ARE COMPLETED.

K67.3 THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETERS OR ITEMS:

pH of scrubbing solution on a daily basis.

Flow rate of recirculating scrubbing solution on a daily basis.

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description: (Previous Application 537105)

PROCESS 1: CONTROL EQUIPMENT					
Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
OXIDIZER, THERMAL, NO. 2, ALLIANCE SYSTEMS, MODEL NO. 306-RTO, 3 BED HOT ROCK TYPE, NATURAL GAS, WITH A 30-HP EXHAUST FAN, 10-HP BYPASS FAN AND A 3-HP COMBUSTION BLOWER, 1.5MMBTU/HR Reference A/N ~~537105~~544397	C-460	D157, D481, D572, D587, D588, **D484 ADD**	NOX: PROCESS UNIT	CO: 2000 PPMV (5);[RULE 407, 4-2—1982]; NOX: 130 LBS/MMSCF NATURAL GAS (1)[RULE 2012, 5-6-2005]; PM: (9)[RULE 404, 2-7-1986]; PM: 0.1 GRAINS/SCF(5)[RULE 409, 8-7-1981]	A72.1, D29.2, E193.1, I331.1, K40.1,

Conditions:

A72.1 THE OPERATOR SHALL MAINTAIN THIS EQUIPMENT TO ACHIEVE A MINIMUM DESTRUCTION EFFICIENCY OF 95% FOR ROG DURING THE NORMAL OPERATION OF THE EQUIPMENT IT VENTS.

D29.2 THE OPERATOR SHALL CONDUCT SOURCE TEST(S) FOR THE POLLUTANT(S) IDENTIFIED BELOW:

Pollutant(s) to be tested	Required test method(s)	Averaging Time	Test Location
VOC	Approved District Method	District Approved averaging time	Simultaneous inlet and outlet

The test shall be conducted at least once during the life of the permit but no later than July 9, 2015 unless otherwise approved in writing by the District.

The test shall be conducted to determine the VOC emissions using an approved District method to determine compliance with all applicable permit condition(s), Rules and Regulations.

The test shall be conducted while the oxidizer is operating at a temperature of not less than the minimum operating temperature specified in this permit. If the operating temperature during the source test is greater than the minimum operating temperature specified in the permit, the minimum operating temperature specified in this permit may be increased to reflect the operating temperature during the source test.

The operator shall comply with administrative conditions NOs. 8, 9, and 10 of Section E of this facility permit.

E193.1 THE OPERATOR SHALLL OPERATE AND MAINTAIN THIS EQUIPMENT ACCORDING TO THE FOLLOWING REQUIREMENTS:

The combustion chamber temperature shall be maintained at a minimum of 1,500 degrees Fahrenheit whenever the equipment it serves is in operation

The operator shall operate and maintain a temperature measuring and recording system to continuously measure and record the combustion chamber temperature pursuant to the operation and maintenance requirements specified in 40 CFR Part 64.7. Such a system shall have an accuracy of within 1% of the temperature being monitored and shall be inspected, maintained, and calibrated on an annual basis in accordance with the manufacturer's specifications

For the purpose of this condition, a deviation shall be defined as when a combustion chamber temperature of less than 1,500 degrees Fahrenheit occurs whenever the equipment it serves is in operation. The operator shall review the records of the combustion chamber temperature on a daily basis to determine if a deviation occurs or shall install an alarm system to alert the operator when a deviation occurs

Whenever a deviation occurs, the operator shall inspect this equipment to identify the cause of such a deviation, take immediate corrective action to maintain the combustion chamber temperature at or above 1,500 degrees Fahrenheit, and keep records of the duration and cause (including unknown cause, if applicable) of the deviation and the corrective action taken

All deviations shall be reported to the AQMD pursuant to the requirements specified in 40 CFR Part 64.9 and Condition Nos. 22 and 23 in Section K of this permit. The report shall include the total operating time of this equipment and the total accumulated duration of all deviations for each semi-annual reporting period specified in Condition No. 23 in Section K of this permit

The operator shall submit an application with a Quality Improvement Plan (QIP) in accordance with 40 CFR Part 64.8 to the AQMD if an accumulation of deviations exceeds 5 percent duration of this equipment's total operating time for any semi-annual reporting period specified in Condition No. 23 in Section K of this permit. The required QIP shall be submitted to the AQMD within 90 calendar days after the due date for the semi-annual monitoring report

The operator shall inspect and maintain all components of this equipment on an annual basis in accordance with the manufacturer's specifications.

The operator shall keep adequate records in a format that is acceptable to the AQMD to demonstrate compliance with all applicable requirements specified in this condition and 40 CFR Part 64.9 for a minimum of five years

I331.1 THE CONDITIONS AND REQUIREMENTS FOR THIS DEVICE IN SECTION H SHALL TAKE EFFECT, AND SHALL SUPERSEDE THOSE IN SECTION D, WHEN THE MODIFICATIONS AUTHORIZED IN SECTION H ARE COMPLETED. THE

OPERATOR SHALL NOTIFY THE AQMD WHEN THE MODIFICATIONS ARE COMPLETED.

K40.1 THE OPERATOR SHALL PROVIDE TO THE DISTRICT A SOURCE TEST REPORT IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description: (Previous Application 516955)

PROCESS 1: CONTROL EQUIPMENT					
Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
OXIDIZER, HOT BED, NO. 1, ALLIANCE SYSTEMS, MODEL NO. 308-RTO, NATURAL GAS, THREE ZONES, 8FT W X 30FT 3IN L. X 9FT 1IN H., 1.5MMBTU/HR Reference A/N ~~516955~~544398	C-455	D79, D80, D81, D154, D173, D174, D178, D276, D278, D279, D289, D335, D338, D411, D412, D413, D414, D416, D417,D474, D476, ~~D550 Delete~~ **D549 ADD** **D618 ADD** **D619 ADD**	NOX: PROCESS UNIT	CO: 2000 PPMV (5); [RULE 407, 4-2-1982];NOX: 130 LBS/MMSCF NATURAL GAS (1)[RULE 2012, 5-6-2005]; PM: (9)[RULE 404, 2-7-1986]; PM: 0.1 GRAINS/SCF (5)[RULE 409, 8-7-1981]	A72.1, A72.2, D28.7, D29.2, E193.1, K40.1

Conditions:

A72.1 THE OPERATOR SHALL MAINTAIN THIS EQUIPMENT TO ACHIEVE A MINIMUM DESTRUCTION EFFICIENCY OF 95% FOR ROG DURING THE NORMAL OPERATION OF THE EQUIPMENT IT VENTS.

A72.2 THE OPERATOR SHALL MAINTAIN THIS EQUIPMENT TO ACHIEVE AN OVERALL CONTROL EFFICIENCY OF 90 PERCENT FOR ROG DURING THE NORMAL OPERATION OF THE EQUIPMENT IT VENTS.

D28.7 THE OPERATOR SHALL CONDUCT A SOURCE TEST(S) IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

The test shall be conducted to determine the capture efficiency based on the mass of VOC usage in the basic equipment/process served.

The district shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted after a source test protocol has been submitted and approved by the District.

D29.2 THE OPERATOR SHALL CONDUCT SOURCE TEST FOR THE POLLUTANTS IDENTIFIED BELOW:

VOC DISTRICT METHOD | APPROVED DISTRICT APPROVED AVERAGING TIME | SIMULTANEOUS INLET/OUTLET

The test shall be conducted at least once during the life of the permit but no later than July 9, 2010 unless otherwise approved in writing by the District

The test shall be conducted to determine the VOC emissions using an approved District method to determine compliance with all applicable permit condition(s), Rules and Regulations

The test shall be conducted while the oxidizer is operating at a temperature of not less than the minimum operating temperature specified in this permit. If the operating temperature during the source test is greater than the minimum operating temperature specified in the permit, the minimum operating temperature specified in this permit may be increased to reflect the operating temperature during the source test

The operator shall comply with administrative conditions NOs. 8, 9, and 10 of Section E of this facility permit

K40.1 THE OPERATOR SHALL PROVIDE TO THE DISTRICT A SOURCE TEST REPORT IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION:

Source test results shall be submitted to the District no later than ~~30~~60 days after the source test was conducted.

Equipment Description:

PROCESS 1: CONTROL EQUIPMENT					
Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
OXIDIZER, THERMAL, NO. 4, ALLIANCE SYSTEMS, MODEL NO. 306-RTO, 3 BED HOT ROCK TYPE, NATURAL GAS, WITH A 30-HP EXHAUST FAN, 10-HP BYPASS FAN AND A 3-HP COMBUSTION BLOWER, 1.5MMBTU/HR Reference A/N ~~523835~~544406	C-364	D277, D346, D347, D350, D352, D353, D354, D357, D358, D359, D361, D482, D589 **D274 Add** **D335 Add**	NOX: PROCESS UNIT	CO: 2000 PPMV (5);[RULE 407, 4-2—1982]; NOX: 130 LBS/MMSCF NATURAL GAS (1)[RULE 2012, 5-6-2005]; PM: (9)[RULE 404, 2-7-1986]; PM: 0.1 GRAINS/SCF(5)[RULE 409, 8-7-1981]	A72.1, D29.2, E193.1, I331.1, K40.1,

Conditions:

A72.1 THE OPERATOR SHALL MAINTAIN THIS EQUIPMENT TO ACHIEVE A MINIMUM DESTRUCTION EFFICIENCY OF 95% FOR ROG DURING THE NORMAL OPERATION OF THE EQUIPMENT IT VENTS.

D29.2 THE OPERATOR SHALL CONDUCT SOURCE TEST(S) FOR THE POLLUTANT(S) IDENTIFIED BELOW:

Pollutant(s) to be tested	Required test method(s)	Averaging Time	Test Location
VOC	Approved District Method	District Approved averaging time	Simultaneous inlet and outlet

The test shall be conducted at least once during the life of the permit but no later than July 9, 2015 unless otherwise approved in writing by the District.

The test shall be conducted to determine the VOC emissions using an approved District method to determine compliance with all applicable permit condition(s), Rules and Regulations.

The test shall be conducted while the oxidizer is operating at a temperature of not less than the minimum operating temperature specified in this permit. If the operating temperature during the source test is greater than the minimum operating temperature specified in the permit, the minimum operating temperature specified in this permit may be increased to reflect the operating temperature during the source test.

The operator shall comply with administrative conditions NOs. 8, 9, and 10 of Section E of this facility permit.

E193.1 THE OPERATOR SHALLL OPERATE AND MAINTAIN THIS EQUIPMENT ACCORDING TO THE FOLLOWING REQUIREMENTS:

The combustion chamber temperature shall be maintained at a minimum of 1,500 degrees Fahrenheit whenever the equipment it serves is in operation

The operator shall operate and maintain a temperature measuring and recording system to continuously measure and record the combustion chamber temperature pursuant to the operation and maintenance requirements specified in 40 CFR Part 64.7. Such a system shall have an accuracy of within 1% of the temperature being monitored and shall be inspected, maintained, and calibrated on an annual basis in accordance with the manufacturer's specifications

For the purpose of this condition, a deviation shall be defined as when a combustion chamber temperature of less than 1,500 degrees Fahrenheit occurs whenever the equipment it serves is in operation. The operator shall review the records of the combustion chamber temperature on a daily basis to determine if a deviation occurs or shall install an alarm system to alert the operator when a deviation occurs

Whenever a deviation occurs, the operator shall inspect this equipment to identify the cause of such a deviation, take immediate corrective action to maintain the combustion chamber temperature at or above 1,500 degrees Fahrenheit, and keep records of the duration and cause (including unknown cause, if applicable) of the deviation and the corrective action taken

All deviations shall be reported to the AQMD pursuant to the requirements specified in 40 CFR Part 64.9 and Condition Nos. 22 and 23 in Section K of this permit. The report shall include the total operating time of this equipment and the total accumulated duration of all deviations for each semi-annual reporting period specified in Condition No. 23 in Section K of this permit

The operator shall submit an application with a Quality Improvement Plan (QIP) in accordance with 40 CFR Part 64.8 to the AQMD if an accumulation of deviations exceeds 5 percent duration of this equipment's total operating time for any semi-annual reporting period specified in Condition No. 23 in Section K of this permit. The required QIP shall be submitted to the AQMD within 90 calendar days after the due date for the semi-annual monitoring report

The operator shall inspect and maintain all components of this equipment on an annual basis in accordance with the manufacturer's specifications.

The operator shall keep adequate records in a format that is acceptable to the AQMD to demonstrate compliance with all applicable requirements specified in this condition and 40 CFR Part 64.9 for a minimum of five years

I331.1 THE CONDITIONS AND REQUIREMENTS FOR THIS DEVICE IN SECTION H SHALL TAKE EFFECT, AND SHALL SUPERSEDE THOSE IN SECTION D, WHEN THE MODIFICATIONS AUTHORIZED IN SECTION H ARE COMPLETED. THE

OPERATOR SHALL NOTIFY THE AQMD WHEN THE MODIFICATIONS ARE COMPLETED.

K40.1 THE OPERATOR SHALL PROVIDE TO THE DISTRICT A SOURCE TEST REPORT IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description:

PROCESS 11: D1 WEST LAB P13.1

SYSTEM #1: Photolithographic Process S1.1

Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
BENCH, PHOTORESIST COATER NO. 1, LENGTH: 6FT 10IN; WIDTH: 3FT; HEIGHT: 6FT 8IN; WITH TWO WAFER CONVEYORS, TWO SPINNERS AND FOUR HOT PLATES A/N: ~~537099~~544403	D346	C364			B59.49, ~~C1.42~~
BENCH, PHOTORESIST COATER NO. 2, LENGTH: 6FT 10IN; WIDTH: 4FT 4IN; HEIGHT: 6FT 8IN; WITH TWO WAFER CONVEYORS, TWO SPINNERS AND FOUR HOT PLATES A/N: ~~537099~~544403	D347	C364			B59.49, ~~C1.42~~
BENCH, TRACK DEVELOP STATION NO. 1, POTASSIUM HYDROXIDE. A/N: ~~537099~~544403	D397	C232			~~B59.9~~ B59.49, ~~C1.42~~
BENCH, TRACK DEVELOP STATION NO. 2, POTASSIUM HYDROXIDE. A/N: ~~537099~~544403	D398	C232			~~B59.9,~~ B59.49, ~~C1.42~~
BENCH, DEVELOPER, C&D SEMICONDUCTOR, MODEL 8800, LENGTH: 4FT 11IN; WIDTH: 3FT 11IN; HEIGHT: 5FT 10IN; A/N: ~~537099~~544403	D477	C232			~~B59.4, B59.36,~~ B59.49, ~~C1.42~~

BENCH, PHOTORESIST COATER, C&D, SEMICONDUCTOR SERVICES, MODEL 8800, LENGTH: 8FT; WIDTH: 2FT 11IN; HEIGHT: 3FT 11IN A/N: ~~537099~~544403	D481	C460			B59.49, ~~C1.42~~
OVEN, NO. 2, VAPOR PRIME, LENGTH: 1FT 10IN; WIDTH: 2FT; HEIGHT: 2FT 11IN; ELECTRICALLY HEATED, 2.2 KVA A/N: ~~537099~~544403	D349	C232			
OVEN, NO. 1, PHOTORESIST BAKE, LENGTH: 1FT 10IN; WIDTH: 2FT; HEIGHT: 2FT 11IN; ELECTRICALLY HEATED. A/N: ~~537099~~544403	D350	C364			
OVEN, NO. 3 PHOTORESIST BAKE, LENGTH: 1FT 10IN; WIDTH: 2FT; HEIGHT: 2FT 11IN; ELECTRICALLY HEATED. A/N: ~~537099~~544403	D352	C364			
OVEN, NO. 4, PHOTORESIST BAKE, LENGTH: 1FT 10IN; WIDTH: 2FT; HEIGHT: 2FT 11IN; ELECTRICALLY HEATED. A/N: ~~537099~~544403	D353	C364			
OVEN, NO. 5, PHOTORESIST BAKE, LENGTH: 1FT 10IN; WIDTH: 2FT; HEIGHT: 2FT 11IN; ELECTRICALLY HEATED. A/N: ~~537099~~544403	D354	C364			
OVEN, LABLINE, LENGTH: 1FT 10IN; WIDTH: 2FT; HEIGHT: 2FT 11IN; ELECTRICALLY HEATED. A/N: ~~537099~~544403	D587	C460			
OVEN, LABLINE, LENGTH: 1FT 10IN; WIDTH: 2FT; HEIGHT: 2FT 11IN; ELECTRICALLY HEATED. A/N: ~~537099~~544403	D588	C460			
OVEN, BARNSTEAD, LABLINE, MODEL 3497M-3 A/N: ~~537099~~544403	D589	C364			
OVEN, TRW, NO. 2, PHOTORESIST BAKE, ELECTRICALLY HEATED A/N: ~~537099~~544403	D277	C364			
BENCH, PHOTORESIST COATER, C&D, SEMICONDUCTOR SERVICES, MODEL 8800 SERIES.	D572	C460			B59.49, ~~C1.42~~

A/N: ~~537099~~544403					
BENCH, MANUAL PHOTORESIST COATER A/N: ~~516969~~544403	D484	C460 ~~C305~~	**ADD**		~~B59.60, C1.53~~ B59.49, ~~C1.42~~
BENCH, PHOTORESIST STRIPPER,SEMITOOL NO.3, MODEL NO. SSTC621270, 18 KVA ELECTRICALLY HEATED, 6 FT 2 IN W. X 3 FT L. X 5FT 10 IN H, WITH ONE SPINNER A/N: ~~516969~~544403	D274	C364 ~~C305~~	**Add**		B59.49, ~~C1.42~~
BENCH, PHOTORESIST STRIPPER, SEMITOOL NO. 8, MODEL NO.SSTC401270, 3 FT 3 IN W. X 5 FT 5 IN L. X 5 FT 7 IN H., 7.2 KW ELECTRICALLY HEATED A/N: ~~516969~~544403	D335	C364 ~~C455~~	**Add**		B59.49, ~~C1.42~~ ~~B27.4, C1.17~~

Conditions:

P13.1 All devices under this process are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1164
VOC	District Rule	109

S1.1 The operator shall limit the material processed to no more than 790 gallon(s) per month.

For the purpose of this condition, material processed shall be defined as materials containing VOC. This limit shall be based on the total combined limit for all equipment in this system.

~~B27.4 The operator shall not use materials containing any carcinogenic compounds identified in SCAQMD Rule 1401, as amended 07-dec-1990.~~

~~For the purposes of this condition, carcinogenic compounds are those in Table 1 of the above mentioned rule, with an effective date of 07-dec-1990 or earlier.~~

~~B59.4 The operator shall not use the following material(s) in this device:~~

~~Materials containing VOC.~~

~~B59.9 The operator shall not use the following material(s) in this device.~~

~~Toxic Air Contaminants in Table 1 of Rule 1401 with a Listing Date of 3/17/000 or earlier except hydrochloric acid.~~

~~B59.36 The operator shall not use the following material(s) in this device.~~

~~Toxic Air Contaminants in Table 1 of Rule 1401 with a Listing Date of 5/02/03 or earlier except hydrochloric acid and hydrofluoric acid.~~

B59.49 The operator shall not use the following material(s) in this device.

Toxic Air Contaminants in Table 1 of Rule 1401 with a Listing Date of 9/10/10 or earlier except cresol, isopropyl alcohol, methanol, xylene, phenol, cellosolve acetate, and chlorobenzene.

~~B59.60 The operator shall not use the following material(s) in this device.~~

~~Toxic Air Contaminants in Table 1 of Rule 1401 with a listing date of 3/04/05 or earlier except xylene, cresol, chlorobenzene and formaldehyde~~

~~C1.17 The operator shall limit the material processed to no more than 93 gallon(s) in any one calendar month.~~

~~For the purpose of this condition, material processed shall be defined as photoresist coatings and solvents containing VOC.~~

~~The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.~~

~~C1.42 The operator shall limit the material processed to no more than 790 gallon(s) per month.~~

~~For the purpose of this condition, material processed shall be defined as materials containing VOC. This limit shall be based on the total combined limit for equipment D274, D335, D346, D347, D397, D398, D477, D481, D572 and D484.~~

~~C1.53 The operator shall limit the material processed to no more than 2 gallon(s) in any one calendar month.~~

~~For the purpose of this condition, material processed shall be defined as material containing VOC.~~

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description:

PROCESS 11: D1 WEST LAB
SYSTEM 2: Integrated Circuit Fabrication.

Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
PLASMA ETCHER, ETCH NO. 1, 65-KVA A/N: ~~537112~~544399	D374	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, ETCH NO. 2, 65-KVA A/N: ~~537112~~544399	D375	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, CLEAN NO. 1, MATRIX, 6.0-KVA A/N: ~~537112~~544399	D378	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, CLEAN NO. 5, MATRIX, 6.0-KVA A/N: ~~537112~~544399	D382	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, CLEAN NO. 6, MATRIX, 6.0-KVA A/N: ~~537112~~544399	D383	C232			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, CLEAN NO. 9, MATRIX, 6.0-KVA A/N: ~~537112~~544399	D386	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, CLEAN NO. 11, MATRIX, 6.0-KVA A/N: ~~537112~~544399	D388	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, DEPOSITION NO. 1, PLASMA THERM INC., 65-KVA A/N: ~~537112~~544399	D390	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, DEPOSITION NO. 2, PLASMA THERM INC., 65-KVA A/N: ~~537112~~544399	D391	C160			~~B59.8,~~ B59.4, B59.71
PLASMA ETCHER, CLEAN NO. 1, MATRIX, 21.4-KVA A/N: ~~537112~~544399	D403	C160			~~B59.52,~~ B59.4, B59.71

PLASMA ETCHER, CLEAN NO. 2, MATRIX, 21.4-KVA A/N: ~~537112~~544399	D404	C160			~~B59.52,~~ B59.4, B59.71
PLASMA ETCHER, CLEAN NO. 4, MATRIX, 21.4-KVA A/N: ~~537112~~544399	D406	C232			~~B59.52,~~ B59.4, B59.71
PLASMA ETCHER, MATRIX, MODEL EHP500, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT; WITH THREE VACUUM PUMPS A/N: ~~537112~~544399	D450	C233			~~B59.13,~~ B59.4, B59.71
PLASMA ETCHER, ICP NO. 1, TRIKON, MODEL OMEGA, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT; 65-KVA WITH THREE VACUUM PUMPS, 2.0-HP TOTAL A/N: ~~537112~~544399	D507	C232			~~B59.52,~~ B59.4, B59.71
PLASMA ETCHER, ICP NO. 2, TRIKON, MODEL OMEGA, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT; 65-KVA WITH THREE VACUUM PUMPS, 2.0-HP TOTAL A/N: ~~537112~~544399	D508	C232			~~B59.52,~~ B59.4, B59.71
PLASMA ETCHER, ICP NO. 3, TRIKON, MODEL OMEGA, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT; 65-KVA WITH THREE VACUUM PUMPS, 2.0-HP TOTAL A/N: ~~537112~~544399	D509	C232			~~B59.52,~~ B59.4, B59.71
PLASMA ETCHER, DESCUMMER, BRANSON/IPC, MODEL REACTOR CENTER PM 1813, LENGTH: 3FT; WIDTH: 3FT; HEIGHT: 3FT. A/N: ~~537112~~544399	D528	C233			~~B27.7,~~ B59.4, B59.71
ION IMPLANTER, ION BEAM MILL, VACUUM PUMP A/N: ~~537112~~544399	D182	C233			B59.4, B59.71
DEPOSITION REACTOR, SPUTTERING NO. 1, 21.4-KVA A/N: ~~537112~~544399	D407	C232			~~B59.52,~~ B59.4, B59.71
PROCESS TANK, PASS-THRU ACID UNIT A/N: ~~537112~~544399	D189	C160			
DEPOSITION REACTOR, VAPOR PRIME, Y.E.S., LENGTH: 1FT 8IN; WIDTH: 2FT; HEIGHT: 2FT 4IN, ELECTRICALLY HEATED A/N: ~~537112~~544399	D552	C232			~~B59.52 C1.46,~~ B59.4, B59.71

PLASMA ETCHER, ICP NO.3, TRIKON, MODEL OMEGA, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT; 65-KVA WITH THREE VACUUM PUMPS, 2.0-HP TOTAL A/N: ~~537112~~544399	D584	C232			~~B59.58,~~ B59.4, B59.71
PLASMA ETCHER, NO. 1, MATRIX, MODEL 105E, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT A/N: ~~537112~~544399	D540	C232			B59.4,~~B59.55,~~ B59.71
PLASMA ETCHER, TEGAL, MODEL 110, LENGTH: 2FT 9IN; WIDTH: 6FT 4IN; HEIGHT: 6FT 10IN; WITH TWO VACUUM PUMPS A/N: ~~537112~~544399	D596	C232			~~B59.66,~~ C1.55, B59.4, B59.71
PLASMA ETCHER, SURFACE TECHNOLOGIES SYSTEMS, MPX A/N: ~~537112~~544399	D613	C160			B59.4, B59.71
BENCH, TRACK DEVELOPER, C&D SEMICONDUCTOR SERVICES, MODEL 8800 SERIES, LENGTH: 4FT 10IN; WIDTH: 4FT; HEIGHT: 3FT 8IN A/N: ~~537112~~544399	D525	C232			~~59.70,~~ 59.4, B59.71
BENCH, TRACK DEVELOPER, C&D SEMICONDUCTOR SERVICES, A/N: ~~537112~~544399	D537	C160			~~59.70,~~ 59.4, B59.71
VACUUM METALIZING FIJI F200 PLASMA ATOMIC LAYER DEPOSITION (ALD) A/N: ~~537112~~544399	D611				~~59.70,~~ 59.4, B59.71
OVEN, OZONE PHOTOREACTOR, MODEL PR-100 A/N: ~~537112~~544399	D614				~~59.70,~~ 59.4, B59.71
DEPOSITION REACTOR A/N: ~~516124~~544399	D462	C160 new conection	**ADD**		B59.4, B59.71
PLASMA ETCHER, MATRIX #6. MATRIX SYSTEM ONE STRIPPER, MODEL NO. 106 A/N: ~~516124~~544399	D511	C160 ~~C161~~	**ADD**		B59.4, B59.71 ~~B59.40~~
PLASMA ETCHER, NO. 14, MATRIX SYSTEM ONE STRIPPER, MODEL NO. 105E A/N: ~~516124~~544399	D516	C160 ~~C161~~	**ADD**		B59.4, B59.71 ~~B59.40~~
DEPOSITION REACTOR, EVAP 04, CHEMICAL VAPOR DEPOSITION, TEMESCAL 2500 A/N: 544399	D615	C232 New	**ADD**		B59.4, B59.71

DEPOSITION REACTOR, EVAP 10, CHEMICAL VAPOR DEPOSITION, TEMESCAL 2500 A/N: 544399	D616	C232 New	**ADD**		B59.4, B59.71
GAS CABINETS A/N 544399	D617	C160 New	**ADD**		B59.4, B59.71
PLASMA ETCHER, DEPOSITION/ETCHER, PLASMATHERM, MODEL DUEL 790 A/N: ~~516~~124544399	D97	C160 ~~C161~~	**ADD**		B59.4, B59.71
PLASMA ETCHER, UNAXIS/PLASMATHERM, MODEL NO. VLR700 A/N: ~~516~~124544399	D513	C232 ~~C161~~	**ADD**		B59.4, B59.71 ~~B59.40~~
DEPOSITION REACTOR, EVAP 07, CHEMICAL VAPOR DEPOSITION, TEMESCAL 2500 A/N: 544399	D621	C232 New	**ADD**		B59.4, B59.71
PLASMA ETCHER, DESCUMMER, TEGAL A/N: 544399	D622	C232 New	**ADD**		B59.4, B59.71
DEPOSITION REACTOR, DEPO 08, CHEMICAL VAPOR DEPOSITION, A/N: 544399	D623	C160 New	**ADD**		B59.4, B59.71
PLASMA ETCHER, ETCH 04, TEGAL. A/N: 544399	D624	C232 New	**ADD**		B59.4, B59.71

Conditions:

S2.1 The operator shall limit the emissions from this system as follows:
NH3 less than 100 lbs/yr
CL2 less than 20 lbs/yr

~~B27.7 THE OPERATOR SHALL NOT USE MATERIALS CONTAINING ANY TOXIC AIR CONTAMINANTS (TAC) IDENTIFIED IN THE SCAQMD RULE 1401, AS AMENDED 5/02/03~~

B59.4 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:

Materials containing VOC

~~B59.8 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 3/17/00 or earlier except ammonia.~~

~~B59.13 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 8/18/00 or earlier~~

~~B59.40 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 5/02/03 or earlier except chlorine, hydrochloric acid, phosphoric acid, hydrofluoric acid, ammonia and isopropyl alcohol~~

~~B59.52 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 5/02/03 or earlier except hydrofluoric acid, hydrochloric acid, ammonia, chlorine or isopropyl alcohol.~~

~~B59.58 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIALS IN THIS DEVICE:~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 3/04/05 or earlier except hydrofluoric acid or chlorine.~~

~~B59.66 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIALS IN THIS DEVICE:~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 3/07/08 or earlier~~

~~B59.70 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIALS IN THIS DEVICE:~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 9/10/10 or earlier.~~

B59.71 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIALS IN THIS DEVICE:

Toxic air contaminants in table 1 of rule 1401 with a listing date of 9/10/10 or earlier except ammonia and chlorine.

~~C1.46 THE OPERATOR SHALL LIMIT THE MATERIAL PROCESSED TO NO MORE THAN 2.0 GALLONS PER MONTH.~~

~~For the purpose of this condition, material processed shall be defined as materials containing VOC. The limit shall be based on the total combined limit for equipment D349 and D552.~~

C1.55 THE OPERATOR SHALL LIMIT THE MATERIAL PROCESSED TO NO MORE THAN 240 IN ANY ONE MONTH.

For the purpose of this condition, material processed shall be defined as number of wafers processed in this equipment.

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description:(Previous A/N 451514)

PROCESS 9: BPL LAB
SYSTEM 4: SOLVENT CLEANING

Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
BENCH, SOLVENT, SOLID STATE EQUIP CORP, MODEL M202, 2FT9IN W. X 4FT 6IN L. X 6FT 5IN H., ELECTRICALLY HEATED Reference A/N ~~451514~~544405	D338	C455			B27.5, C1.19
BENCH, SOLVENT CLEANING STATION NO. 1, WAFER PROCESS SYSTEMS, 3FT W. X 4FT L. X 6FT 8IN H. Reference A/N ~~451514~~544405	D416	C455			B59.15, C1.26
BENCH, SOLVENT CLEANING WET BENCH, WAFER PROCESS SYSTEMS, 3FT W. X 8FT L. X 6FT 8IN H. Reference A/N ~~451514~~544405	D417	C455			B59.15, C1.26
~~DRYER, IPA, FSI INTERNATIONAL, 2FT 6IN W. X 3FT 6IN L. X 6FT 1IN H.~~ ~~Reference A/N 451514544405~~	~~D550~~	~~C455~~	~~DELETE~~		~~C1.26~~
DRYER, IPA, AIO MICROSERVICE, MODEL NO. SF-600, 2FT 6IN W. X 3FT 6IN L. X 6FT 11IN H. Reference A/N ~~441113~~544405	D549	C455 ~~C305~~	ADD		B59.15, C1.26 ~~B59.25, C1.45, C1.52~~

Conditions:

B27.5 The operator shall not use materials containing any toxic air contaminants (TACs) identified in the SCAQMD Rule 1401, as amended 12-mar-1999.

For the purposes of this condition, toxic air contaminants (TACs) are those in Table I of the above mentioned rule, with an effective date of 12-mar-1999 or earlier.

B59.15 The operator shall not use the following material(s) in this device :

toxic air contaminants in table 1 of rule 1401 with a listing date of 8/18/2000 or earlier except isopropyl alcohol, methanol, and trichloroethylene.

~~B59.25 The operator shall not use the following material(s) in this device :~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 3/04/05 or earlier except phenol, methanol, isopropyl alcohol and trichloroethylene.~~

C1.19 The operator shall limit the material processed to no more than 300 lb(s) in any one calendar month.

For the purpose of this condition, material processed shall be defined as photoresist coatings and solvents containing VOC.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

C1.26 The operator shall limit the material processed to no more than 300 gallon(s) per month.

For the purpose of this condition, material processed shall be defined as material containing VOC.

This limit shall be based on the total combined limit for equipment D416, D417 ~~&~~ ~~D550,~~ & D549.

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description:

PROCESS 9: BPL LAB					P13.1
SYSTEM #1 Photolithographic Processes					S1.2
Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
BENCH, PHOTORESIST COATER NO. 1 Reference A/N ~~499348~~544408	D411	C455			B59.14, ~~C1.24~~
BENCH, PHOTORESIST COATER NO. 2 Reference A/N ~~499348~~544408	D412	C455			B59.14, ~~C1.24~~

BENCH, TRACK DEVELOP/STRIP STATIONS #1 & #2, HEIGHT: 5FT 10IN; LENGTH: 5FT; WIDTH: 3FT 10IN; Reference A/N ~~499348~~544408	D438	C6			B59.20
OVEN NO. 1, LABLINE, MODEL 34390M Reference A/N ~~499348~~544408	D413	C455			B59.14, ~~C1.24~~
OVEN NO. 2, LABLINE, MODEL 34390M Reference A/N ~~499348~~544408	D414	C455			B59.14, ~~C1.24~~
OVEN, YES, MODEL YES-10TA Reference A/N ~~499348~~544408	D597	C6			B59.65, C1.56
OVEN, NO. 22, LAB-LINE, MODEL 3940M, ELECTRIC. Reference A/N 544408	D618	C455 new	ADD		B59.14
OVEN, NO. 24, LAB-LINE, MODEL 3940M, ELECTRIC. Reference A/N 544408	D619	C455 new	ADD		B59.14

Conditions:

S1.2 THE OPERATOR SHALL LIMIT THE MATERIAL PROCESSED TO NO MORE THAN 42 GALLON(S) PER MONTH.

For the purpose of this condition, material processed shall be defined as material with a VOC content of 9.2 lbs/gal or less. This limit shall be based on the total combined limit for all equipment in this system.

B59.14 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIALS IN THIS DEVICE:

Toxic air contaminants in table 1 of rule 1401 with a listing date of May 2, 2003 or earlier except methanol, isopropyl alcohol and chlorobenzene.

B59.20 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIALS IN THIS DEVICE:

Toxic air contaminants in table 1 of rule 1401 with a listing date of 3/04/05 or earlier except hydrochloric acid, hexavalent chrome, hydrofluoric acid, nickel sulfamate, nitric acid and phosphoric acid.

B59.65 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:

TOXIC AIR CONTAMINANTS (TACS) IN TABLE 1 OF RULE 1401 WITH A LISTING DATE OF MARCH 7, 2008 OR EARLIER EXCEPT AMMONIA.

MATERIALS CONTAINING VOC.

~~C1.24 THE OPERATOR SHALL LIMIT THE MATERIAL PROCESSED TO NO MORE THAN 42 GALLON(S) PER MONTH.~~

~~This limit shall be based on the total combine limit for equipment D411-D414.~~

~~For the purpose of this condition, material processed shall be defined as material with a VOC content of 9.2 lbs/gal or less.~~

C1.56THE OPERATOR SHALL LIMIT THE THROUGHPUT TO NO MORE THAN 480 BATCH(ES) IN ANY ONE MONTH.

PERMIT TO CONSTRUCT
SECTION "H"

Equipment Description:(Previous A/N 499350)

PROCESS 9: BPL LAB S1.3
SYSTEM 2: INTEGRATED CIRCUIT FABRICATION

Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
PLASMA ETCHER, BACKSIDE VIA ETCH, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 65-KVA Reference A/N ~~499350~~544401	D428	C6			B59.38
PLASMA ETCHER, BACKSIDE VIA ETCH, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 65-KVA Reference A/N ~~499350~~544401	D429	C6			B59.38
PLASMA ETCHER, BACKSIDE VIA ETCH, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 65-KVA Reference A/N ~~499350~~544401	D430	C6			B59.38
PLASMA ETCHER, BACKSIDE VIA ETCH, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 65-KVA Reference A/N ~~499350~~544401	D431	C6			B59.38
PLASMA ETCHER, BACKSIDE VIA ETCH, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 65-KVA Reference A/N ~~499350~~544401	D432	C6			B59.38

PLASMA ETCHER, BACKSIDE VIA ETCH, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 65-KVA Reference A/N ~~499350~~544401	D433	C6			B59.38
PLASMA ETCHER, MATRIX, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 21.4-KVA Reference A/N ~~499350~~544401	D434	C6			~~B59.12~~ B59.38
PLASMA ETCHER, MATRIX, HEIGHT: 6FT;, LENGTH: 3FT; WIDTH: 4FT; 21.4-KVA Reference A/N ~~499350~~544401	D435	C6			~~B59.12~~ B59.38
PLASMA ETCHER, ICP NO. 1, TRIKON, MODEL OMEGA, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT; 65-KVA, WITH THREE VACUUM PUMPS, 2.0-HP TOTAL Reference A/N ~~499350~~544401	D501	C6			B59.38
PLASMA ETCHER, ICP NO. 2, TRIKON, MODEL OMEGA, LENGTH: 3FT; WIDTH: 4FT; HEIGHT: 6FT; 65-KVA, WITH THREE VACUUM PUMPS, 2.0-HP TOTAL Reference A/N ~~499350~~544401	D502	C6			B59.38
PLASMA ETCHER, CLEANER, TWO CHAMBER, TECHNIX, MODEL 800-II, LENGTH: 3FT 5IN; WIDTH: 3FT 5IN; HEIGHT: 6FT 0.5IN; 65-KVA, WITH THREE VACUUM PUMPS, 4.0-HP TOTAL Reference A/N ~~499350~~544401	D503	C6			B59.38
PLASMA ETCHER, STS, MODEL MPX HRM, LENGTH: 6FT; WIDTH: 2FT 4IN; HEIGHT: 6FT 1.75IN; WITH TWO VACUUM PUMPS Reference A/N ~~499350~~544401	D595	C6			~~B59.55~~ B59.38
PLASMA ETCHER, PLASMA THERM, MODEL 790, HEIGHT: 6FT 6IN; LENGTH: 3FT 5IN; WIDTH: 3FT 5IN, 65-KVA Reference A/N ~~516124~~544401	D426	C6	**ADD**		B59.38

Conditions:

S1.3 The operator shall limit the material processed to no more than 89 cubic feet in any one calendar month.

For the purpose of this condition, material processed shall be defined as chlorine gas used in this system.

~~B59.12 The operator shall not use the following material(s) in this device :~~

~~Toxic air contaminants in table 1 of rule 1401 with a listing date of 8/13/99 or earlier~~

B59.38 The operator shall not use the following material(s) in this device :

Toxic air contaminants in table 1 of rule 1401 with a listing date of ~~5/02/03~~9/10/2010 or earlier except chlorine

~~B59.55 The operator shall not use the following material(s) in this device :~~
~~Toxic air contaminants in Table 1 of Rule 1401 with a listing date of 3/04/05 or earlier~~

Background:
Northrop has filed the following applications on 11/13/2012 to consolidate devices that were originally located at the D1 East Labs under Process 10. D1East will eventually be shut down and these applications are part of the consolidation. The following table illustrates the applications filed and dates permits to operate were issued.

Application No.	Permit Action	Device No.	Previous app. No.	Previous P/O
544392	RECLAIM/Title V revision application		537096	
544394	P/C to Modify exhaust to C6	C6 Scrubber connect D426,	502641	G17523 Issued 4/13/2012
544407	P/C to Modify exhaust to C160	C160 Scrubber Connect D97, D462, D511, D516, D617(gas cab), D623(depo 08)	537102	P/C Granted 9/04/2012
544396	P/C to Modify exhaust to C232	C232 Scrubber Connect D513, Evap 4, D615 & Evap 10, D616, D621 evap 07, D622 tegal01 D624 tegal 04	537100	P/C Granted 9/04/2012
544397	P/C to Modify exhaust to C460	C460 Oxidizer Connect D484	537105	P/C Granted 9/04/2012
544398	P/C to Modify exhaust to C455	C455 Oxidizer Connect D549,oven 22(D618) &	516955	G14881 issued 09/07/2011

		24(D619) ~~Delete D550~~		
544406	P/C to Modify exhaust to C364	C364 Oxidizer Connect D274 & D335	523835	G17592 issued 04/25/2012
544403	P/C to Modify Process 11, System 1;	D484, D274 & D335 are to be removed from P10S1 and added to P11S1. D484 will be disconnected from C305 and connected to C460. D274 & D335 will be disconnected from C305 & C455 respectively and connected to C364.	537099	P/C Granted 9/04/2012
544399	P/C to Modify Process 11, System 2;	D462, D511, D516, D97 were removed from P10S2. All devices but D462 are to be disconnected from C161. These devices will be add to P11S2 and connected to C160. Devices D615, D616, D617, D621, D622, D623 & D624 are new devices to be added to P11S2. D623 & D617 will be connected to C160 and the remaining new device will be connected to C232.	537112	P/C Granted 9/04/2012
544405	P/C to Modify Process 9, System 4;	~~Delete D550~~ D549 is removed from P8S4 and disconnected from C305. D549 will be connected C455	451514	F80513 Issued 2/02/2006
544402	P/C to Modify Process 9, System 1	This is new equipment(oven 22 (D618) & oven 24 (D619)) that will be added to P9S1.	499348	G17521 Issued 4/25/2012
544401	P/C to Modify Process 9, System 2;	D426 is removed from P10S2 and moved to P9S2 and connected to C6	499350	G17522 issued 4/25/2012

*Northrop has requested that D96 and D550 be removed from the permit. D550 was part of Process 9,System 4 and was reflected in the modification. D96 was in Process 10, System 2 which is part of the overall transition

and was requested to be removed instead of moved. See Northrop's final spreadsheet of changes in the appendix.

This is a RECLAIM Cycle 2 and title V facility. The proposed project is considered as a "diminimus" permit revision to this facility title V permit.

The District records indicate that during the last two years Northrop Grumman was issued one Notice to Comply (NC E18838). This notice was issued on 12/19/2012. The NC required Northrop to file a permit application for an onsite emergency ICE. The application has been filed and the facility is in compliance with all District's Rules and Regulations. There are no other Notices of Violation, Notices To Comply or Complaints on record against this facility for the last two years as of 4/9/2013

Emissions Calculations:

Process 11, System 1, Application No. 544403

Devices D274, D335 & D484 will be transferred from P10S1 and disconnected from oxidizer C305. These devices will be added to this system and vented. D274 & D335 will be vented to oxidizer C364 and D484 exhausted to oxidizer C460. D484 previously had a 2.0 gal/month limit and D335 a 93 gallons per month limit. These usages will not be carried over so there will be no change to the emissions by the addition of this equipment.

These devices will be added to Process 11 system 1 and bubbled under condition C1.42, the existing cap of 790 gallons per month of materials containing VOC with no increase. The operations are conducted within a clean room under negative pressure which has been determined to operate as a Permanent Total Enclosure.

100% collection efficiency
95% destruction efficiency
95% overall efficiency

For all devices subject to this condition

R1 = (790 gal/month)(6.61 lbs VOC/gal)/30 day/month = 174.06 lbs VOC/day
R2 = 174.06 lbs VOC/day(1-0.95) = 8.70 lbs/day, @8hrs/day 1.09 lbs/hr
Condition C1.42 has a total of 790 gallons per month. D484 will be controlled by oxidizer C460 so there will be no increase in VOC by this change. Condition C1.42 will be converted to a system condition S1.1.

Process 11, System 2, Application 537112

Plasma Etcher D613 was calculated to have an uncontrolled emission of 0.221 lbs/hr @ one hour per week. Process 11 system 2 has 23 plasma/deposition reactors. The changes to this system will add 11 plasma/deposition reactors. Five of these reactors existed in different labs. Six are new devices. The following total emission was based on D613's emissions estimate.

R1 = 0.221 lbs PM10/hr(23 devices) = 5.08 lbs/hr, 5.08 lbs/day
1 hour/week, 70% scrubber efficiency
R2 = 1.52 lbs/hour, 1.52 lbs/day

Adding 11 etchers/deposition reactors to this system;
Assume 0.221 lbs/hr uncontrolled per etcher
R1 = (0.221 lbs/hr)(11 devices) = 2.43 lbs/hr, 2.43 lbs/day
R2 = (2.43 lbs/hr)(1-0.70) = 0.73 lbs/hr, 0.73 lbs/day

Total R1 = 5.08 lbs/hr + 2.43 lbs/hr = 7.51 lbs/hr, 7.51 lbs/day
R2 = 7.51 lbs/hr (1-0.7) = 2.25 lbs/hr, 2.25 lbs/day total

Five devices added were previously operated under a different process and system at this facility. Therefore, the transfer of these devices to this system will not increase particulate emissions from the facility.

The six new devices would add
R1 = 6(0.221 lbs/hr) = 1.32 lbs/hr, 1.32 lbs/day
R2 = 1.32 lbs/hr (1-0.7) = 0.396 lbs/hr, 0.396 lbs/day

Process 9, System 4, Application no. 544405

D549 IPA dryer will be transferred from P8S4 which was subject to conditions C1.45 and C1.52. These conditions limited D289 and D549 to 190 gal/month of VOC containing material and 2.0 gal/mont TCE. With the transfer of D549 to this system, these usage conditions will be split in half. C1.45 will be reduced to 95 gal/month of VOC containing material and TCE in condition C1.52 will be reduced to 1.0 gallon per month. Condition C1.45 & C1.52 will only be applicable to D289.

Process 9, Sys 4 limited by two conditions. D338 has a 300 pound per month of VOC containing material under C1.19. D416, D417 & D550 are limited by C1.26 to 300 gallons/month of VOC containing material. Since we are replacing D550 with D549, the emissions from D338 will not be changed and the D549 will be bubbled under the existing VOC cap under C1.26. D550 will be inactivated and removed.

D416, D417 & D549:
R1 = (300 gal/month)(6.6 lbs/gal)/(30day/month) = 66 lbs ROG/day
R2 = (66 lbs ROG/day)(1-0.9) = 6.6 lbs/day

D338:
(300lbs coatings/month)/(10lbs/gal)(6lb VOC/gal) = 180 lbs VOC/month
R1 = (180 lbs VOC/month)/(30day/month) = 6 lbs/day
R2 = (6 lbs VOC/day)(1-0.9) = 0.6 lbs/day

Total VOC emissions fro Process 9 system 4.
R1 = 66 lbs VOC + 6 lbs VOC = 72 lbs VOC/day
R2 = 72 lbs VOC/day(1-0.9) = 7.2 lbs/day

All emissions are accounted for in the coating equipment. Everything is vented to oxidizer C455. Device D549 will be replacing device D550 which is subject to an equipment cap of 300 gallons per month under C1.26.

Process 9, System 1, Application No. 544408

Two new devices ovens D618 and D619 will be added to this system. This system has a VOC cap (condition C1.24) of 42 gallons per month at 9.2 pounds per gallon and will not be increased. The VOC materials are applied and accounted for in the coaters. No other coatings or other VOC materials are used in the ovens. The two ovens D618 & D619 are electric, vented to oxidizer C455, and will not cause any change in the emissions from this system. The ovens are used to cure coatings applied in the coaters of this system. The previous emissions from application nos 499348 and 419143 will be carried over.

The equipment cap under condition C1.24 will be changed to a system cap S1.2.

ROG:

Hourly	Daily:
R1=0.53 lbs/hr	12.72 lbs/day
R2 = 0.05 lbs/hr	1.2 lbs/day

PM10:

R1 = 0.11 lbs/hr	0.88 lbs/day
R2 = 0.01 lbs/hr	0.08 lbs/day

Process 9, System 2, Application No. 544401

Plasma Etcher D426 will be transferred from P10S2. Under the new system, this device will be controlled by scrubber C6. The system will be limited to 89 cubic feet of Chlorine gas per month under condition S1.3.

Particulate:

Hourly

R1 = 1.63E-02 lbs/hr, @8 hrs/day, 0.130 lbs/day

R2= 4.89E-03 lbs/hr, 0.040 lbs/day

Summary of emission increase:

Process/System	PM10 R2 (lbs/day)	VOC R2 (lbs/day)
P11/S1	0	0
P11/S2	0.4	0
P9/S4	0	0
P9/S1	0	0
P9/S2	0	0
Total	0.4	0

Risk Assessment:

Process 11, System 1 (application no. 544403)

The emission from this system is capped under existing limit of 790 gallons used of material containing VOC. In addition, the equipment is limited to what compounds are allowed to be used. Therefore, there will be no increase in risk so 1401 will not be triggered.

Process 11, System 2 (application no. 544399)
The addition of the six new plasma/deposition reactors will result in NH3 and CL2 emission increase. To be conservative for the last five year usage, doubling the usage would be appropriate. The emissions are controlled by scrubbers C160 and C232.

A total of 100 lbs NH3 per year and 20 lbs Cl2 per year will be used to determine the risk from the entire system.

Operating schedule: 8 hrs/day, 5 days/week, 52 weeks/yr

$R1_{(NH3)}$ = (100 lbs/yr)/(2080 hs/yr) = 0.048 lbs/hr
$R2_{(NH3)}$= (0.48 lbs/hr)(1-0.7) = 0.014 lbs/hr
$R1_{(Cl2)}$ = (20 lbs/yr)/(2080 hrs/yr) = 0.0096 lbs/hr
R2(cl2)= (0.0096lbs/hr)(1-0.7) = 0.0029 lbs/hr

The following conditions will be added to this system:
S2.1 The operator shall limit the emissions from this system as follows:
NH3 less than 100 lbs in any one year
Cl2 less than 20 lbs in any one year

B59.71 The operator shall not use the following material(s) in this device.
Toxic Air Contaminants in Table 1 of Rule 1401 with a Listing Date of 9/10/10 or earlier except ammonia and chlorine.

B59.4 The operator shall not use the following material(s) in this device.

Materials containing VOC

Process 9, System 4 (application no. 544405)
There will be no emission increase with the replacement of dryer D550 with D549. The emissions are vented to an afterburner (C455). No impact to the risk will occur. Compliance is expected.

Process 9, System 1 (application no. 544408)
There will be no emission increase with the addition of ovens D618 & D619. The emissions are vented to an afterburner (C455). No impact to the risk will occur. Compliance is expected.

Process 9, System 2 (application no. 544401)
The addition of this plasma etcher D426 will not cause an emission increase. The emissions will continue to be controlled and the system will be capped to limit the amount of chlorine used per month.
Total of 13 plasma etchers. Apply B59.38 to all etchers and delete B59.12 & B59.55.
Original estimate (a/n 422138) for the uncontrolled chlorine usage was 0.423lbs/day for three etchers. If the usage is scaled up by 13:3, the following usage would apply:

0.423 lbs/day)(13/3) = 1.833 lbs/day uncontrolled would exceed tier 2. Adjusting the usage to 1.65 lbs/day would pass tier 2 screening. The total chlorine usage per month would be as follows:

1.65 lbs/day(23 ft3/month/0.423 lbs/day) = 89.71 ft3 Cl2/month

System condition S1.3 will apply to the entire system to limit the total monthly Chlorine usage to 89 cubic feet per month to prevent an increase in toxics. Compliance is expected.

Control Evaluation:
A table for each of the following control devices with the exhaust flows is in the appendix.

Application No. 544394
Scrubber C6
Scrubber C6 which is used to control the acid fumes generated by processes associated with this scrubber. It has an exhaust capacity of 25,000 cfm. The total exhaust flow used to vent the various devices connected to this device which includes the addition of D426 is 19,775 cfm. This scrubber has 5,225 cfm excess capacity. This scrubber has the capacity to vent all the connected devices.

Application No. 544407
Scrubber C160
Scrubber C160 is an acid fume scrubber and has an exhaust capacity of 24,000 cfm. The total exhaust flow used to vent the various devices connected to this device which includes the addition of D97, D462, D511, D516, D623 & D617 is 13,255 cfm. This scrubber has 10,745 cfm excess capacity. This scrubber has the capacity to vent all the connected devices.

Application No. 544396
Scrubber C232
Scrubber C232 has an exhaust capacity of 17,000 cfm. The total exhaust flow used to vent the various devices connected to this device which includes the addition of D513, D615, D616, D621, D622 & D624 is 6,475 cfm. This scrubber has 10,525 cfm excess capacity. This scrubber has the capacity to vent all the connected devices.

Application No. 544397
Oxidizer C460
Oxidizer C460 vents VOC emissions from various processes which has an exhaust capacity of 5,000 cfm. The total exhaust flow used to vent the various devices connected to this device which includes the addition of D484 is 1,065 cfm. This oxidizer has 3,935 cfm excess capacity. This oxidizer has the capacity to vent all the connected devices.

Application No. 544398
Oxidizer C455
Oxidizer C455 vents VOC emissions from various processes which has an exhaust capacity of 8,000 cfm. The total exhaust flow used to vent the various devices connected to this

device which includes the addition of D549, D618 & D619 is 6,260 cfm. This oxidizer has 1,740 cfm excess capacity. This oxidizer has the capacity to vent all the connected devices.

Application No. 544406
Oxidizer C364
Oxidizer C364 vents VOC emissions from various processes which has an exhaust capacity of 5,000 cfm. The total exhaust flow used to vent the various devices connected to this device which includes the addition of D274 & D355 is 3,765 cfm. This oxidizer has 1,235 cfm excess capacity. This oxidizer has the capacity to vent all the connected devices.

RULE EVALUATION

Rule 212 (c)(1):This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school.

No public notice is required since no school is located within 1,000 ft from the above site.

Rule 212 (c)(2):This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g).

The proposed project will result in a emission increase from the facility. However, a Rule 212(c) (2) notice will not be triggered since the emission increase is below the daily maximum specified in Rule 212(g).

Rule 212(c)(3):This section requires a public notice for all new or modified permit unit with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in MICR greater than 1E-6 per permit unit or greater than 10E-6 per facility.

The proposed project will not result in an increase of toxic emissions in excess of the one in a million. Therefore Public Notice is not required under this section of the rule.

Rule 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums as specified by Rule 212(g).

The emission increase due to the operation of this equipment is negligible and the following summarizes the emission increase:

	Maximum Daily Emissions					
	ROG	NO_x	PM_{10}	SO_2	CO	Pb
Emission increase	0	0	0	0	0	0

MAX Limit (lb/day)	**30**	**40**	**30**	**60**	**220**	**3**
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

No public notice is required since the emission increase is below the thresholds.

Rule 401: With the proper maintenance and operation of this equipment, compliance with this rule is expected.

Rule 402: With proper maintenance and operation, this equipment is not expected to create a nuisance.

Rule 1164: All VOC's are vented to an afterburner in compliance with the requirements of this rule. Compliance with this rule is expected.

Rule 1303(a): The emissions from the chemical operations are vented to a scrubber and all VOC's are vent to an afterburner. BACT is applied for each criteria pollutant. Compliance with BACT is achieved.

Rules 1303(b)(1) modeling:
The hourly emissions from this equipment are below the screening levels in the Appendix A table. Compliance is expected.

Rule 1303(b)(2) Offsets:
No PM10 offsets are required for this operation since the emissions are less than 0.49 lbs PM10/day. The VOC emissions will not be increased since the VOC emissions are capped. No offsets are required.

Rule 1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

Rule 1401: Compliance with this rule is expected.

RULE 2005: Northrop Grumman is a NOx RECLAIM facility. The proposed project will not result in an increase in NOx emissions. Compliance with rule is expected.

REGULATION XXX:

This facility is in the RECLAIM program. The proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or hazardous air pollutants (HAPs), and a "minor permit revision" for RECLAIM pollutants to the RECLAIM/Title V permit for this facility.

Non-RECLAIM Pollutants or HAPs

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or HAPs from

these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NOx*	40
PM10	30
SOx*	60
CO	220

* Not applicable if this is a RECLAIM pollutant

To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 5th permit revision to the Title V renewal permit issued to this facility on September 7, 2011. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

Revision	HAP	VOC	NOx*	PM10	SOx	CO
Previous Permit Revision Total Cumulative to date. Title V permit renewed Sept.7, 2011	0	0	0	0	0	1
5th Permit Revision	0	0	0	0	0	0
Cumulative Total	0	0	0	0	0	1
Maximum Daily	30	30	40*****	30	60	220

* RECLAIM pollutant, not subject to emission accumulation requirements

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs.

RECLAIM Pollutants

Rule 3000(b)(12)(A)(v) defines a "minor permit revision" as any Title V permit revision that does not result in an emission increase of RECLAIM pollutants over the facility starting Allocation plus nontradeable Allocations, or higher Allocation amount which has previously undergone a significant permit revision process.

Since NOx is a RECLAIM pollutant for this facility, a separate analysis shall be made to determine if the proposed permit revision is considered a "minor permit revision" for RECLAIM pollutants. The proposed modifications will not result in any NOx emissions, as a result, this proposed project is considered as a "minor permit revision" for RECLAIM pollutants.

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "de minimis significant permit

revision" for non-RECLAIM pollutants and a "minor permit revision", for RECLAIM pollutant, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.

Conclusion:
This equipment will operate in compliance with all District Rule and Regulations. Permits to Construct are recommended for the above equipment.