

RECIPROCATING INTERNAL COMBUSTION ENGINES
AIR GENERAL PERMIT REGISTRATION FORM

RECEIVED

FEB 21 2012

Part II. Notification to Permitting Office

(Detach and submit to appropriate permitting office; keep copy onsite)

DIVISION OF AIR
RESOURCE MANAGEMENT

Instructions: To give notice to the Department of an eligible facility's intent to use this air general permit, the owner or operator of the facility must detach and complete this part of the Air General Permit Registration Form and submit it to the appropriate Department of Environmental Protection or local air pollution control program office which has permitting authority. Please type or print clearly all information, and enclose the appropriate air general permit registration processing fee pursuant to Rule 62-4.050, F.A.C. (\$100 as of the effective date of this form)

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

- Construct and operate a proposed new facility.
- Operate an existing facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit).

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

- Continue operating the facility after expiration of the current term of air general permit use.
- Continue operating the facility after a change of ownership.
- Make an equipment change requiring re-registration pursuant to Rule 62-210.310(2)(e), F.A.C., or any other change not considered an administrative correction under Rule 62-210.310(2)(d), F.A.C.

0990697-001

Surrender of Existing Air Operation Permit(s) - For Initial Registrations Only

If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. In such case, check the first box, and indicate the operation permits being surrendered. If no air operation permits are held by the facility, check the second box.

- All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s): _____
- No air operation permits currently exist for this facility.

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)

South Florida Water Management District

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a registration form must be completed for each.)

Pump Station G-436

Facility Location (Provide the physical location of the facility, not necessarily the mailing address.)

Street Address: 20010 U.S. HWY 27 (Lat: 26.22.37/Long: 80.30.54)

City: South Bay

County: Palm Beach

Zip Code: 33493

Facility Start-Up Date (Estimated start-up date of proposed **new** facility.)(N/A for existing facility)
Pump Station used for flood control. Station to begin operation approximately March 2012.

Owner/Authorized Representative

Name and Position Title (Person who, by signing this form below, certifies that the facility is eligible to use this air general permit.)

Print Name and Title: Michael Gallagher, Bureau Chief, Field Operations North, Operation, Maintenance and Construction Division

Owner/Authorized Representative Mailing Address

Organization/Firm: South Florida Water Management District

Street Address: 3301 Gun Club Road

City: West Palm Beach

County: Palm Beach

Zip Code: 33406

Owner/Authorized Representative Telephone Numbers

Telephone: (561) 682-2124

Fax: (561) 681-6232

Cell phone (optional):

Facility Contact (If different from Owner/Authorized Representative)

Name and Position Title (Plant manager or person to be contacted regarding day-to-day operations at the facility.)

Print Name and Title: Jeffrey Smith, Lead Environmental Scientist

Facility Contact Mailing Address

Organization/Firm: South Florida Water Management District

Street Address: 3301 Gun Club Road

City: West Palm Beach

County: Palm Beach

Zip Code: 33406

Facility Contact Telephone Numbers

Telephone: (561) 682-2516

Fax: (561) 681-6232

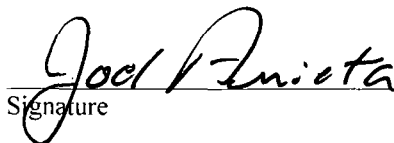
Cell phone (optional):

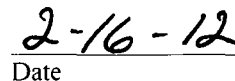
Owner/Authorized Representative Statement

This statement must be signed and dated by the person named above as owner or authorized representative

I, the undersigned, am the owner or authorized representative of the owner or operator of the facility addressed in this Air General Permit Registration Form. I hereby certify, based on information and belief formed after reasonable inquiry, that the facility addressed in this registration form is eligible for use of this air general permit and that the statements made in this registration form are true, accurate and complete. Further, I agree to operate and maintain the facility described in this registration form so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof.

I will promptly notify the Department of any changes to the information contained in this registration form.


Signature


Date

Fuel Consumption

If this is an **initial registration** for reciprocating internal combustion engine operations, provide an estimate of the total amount of fuel expected to be consumed over a 12-month period. Note: the general permit limits fuel consumption by all reciprocating internal combustion engines at the facility to 20,000 gallons per year of gasoline, 250,000 gallons per year of diesel fuel, 1.15 million gallons per year of propane, 40 million standard cubic feet per year of natural gas, or an equivalent prorated amount if multiple fuels are used

The annual operating hours for the main pump engines is estimated at 1,800 hours. Attached is an emission calculation spread sheet. Estimated annual consumption is 152,000 gallons.

If this is a **re-registration** for reciprocating internal combustion engine operations, provide the highest 12-month total fuel consumption amount, in appropriate units, for the last five years. Indicate the 12-month period over which this fuel consumption occurred.

Description of Facility

Below, or as an attachment to this form, provide a description of the reciprocating internal combustion engine operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe all air pollutant-emitting processes and equipment at the facility, and identify any air pollution control measures or equipment used.

Station is used for floor control and water quality management. Station operates three Caterpillar, Model 3512, 1249 hp diesel engines that power three water pumps. Station operates one MTU, Model G45TB-3D, 1046 hp (650 kW) diesel engine emergency generator.

South Florida Water Management District

Pump Station G-436

25

27

Palm Beach County

Broward County

9802 ft

2004-05 SFWMD Aerial Photography
2009 Palm Beach County Aerial Photography

©2009 Google

Imagery Dates: Jan 17, 2005 - Jan 21, 2009

26°21'21.47" N 80°32'01.46" W elev 0 ft

Eye alt 33912 ft

**South Florida Water Management District
Calculation Sheet - 100% Distillate Oil**

Owner/Operator: South Florida Water Management District
Facility: Pump Station G-436
Subject: Emission Estimates - Ultra Low Sulfur (0.0015%) Distillate Oil

Emission Factor Source: AP-42, Tables 3.4-1 thru 4, October 1996
Source Classification Code: SCC 2-02-001-02
Emissions Unit: EU001

Operating Data

Parameter	Engine #1	Engine #2	Engine #3	Engine #4	Units	
Hours of Operation ¹ :	600	600	600	500	hr/yr	
Rating	1249	1249	1249	1046	bhp	
Fuels:	DO	DO	DO	DO	Distillate Oil	
Fuel Usage:	68.36	68.36	68.36	57.25	gal/hr	
	41,017	41,017	41,017	28,625	gal/yr	
Heat Content:	137,030	137,030	137,030	137,030	Btu/gal	
Heat Input ² :	9.37	9.37	9.37	7.85	MMBTU/hr	
Sulfur Content	0.0015	0.0015	0.0015	0.0015	% Sulfur by Weight	
Pollutant	Engine #1	Engine #2	Engine #3	Power Gen. 1	AP-42 / Totals	Units
Nitrogen Oxides	8.993	8.993	8.993	6.276	33.25	TPY
	29.976	29.976	29.976	25.104	115.03	lb/hr
	3.20E+00	3.20E+00	3.20E+00	3.20E+00	3.20E+00	lb/MMBTU
Carbon Monoxide	2.389	2.389	2.389	1.667	8.83	TPY
	7.962	7.962	7.962	6.668	30.56	lb/hr
	8.50E-01	8.50E-01	8.50E-01	8.50E-01	8.50E-01	lb/MMBTU
Particulate Matter	0.281	0.281	0.281	0.196	1.04	TPY
	0.937	0.937	0.937	0.785	3.59	lb/hr
	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01	lb/MMBTU
PM10	0.161	0.161	0.161	0.112	0.60	TPY
	0.537	0.537	0.537	0.450	2.06	lb/hr
	5.73E-02	5.73E-02	5.73E-02	5.73E-02	5.73E-02	lb/MMBTU
Volatile Organic Compounds	0.230	0.230	0.230	0.161	0.85	TPY
	0.767	0.767	0.767	0.643	2.94	lb/hr
	8.19E-02	8.19E-02	8.19E-02	8.19E-02	8.19E-02	lb/MMBTU
Sulfur Dioxide	0.004	0.004	0.004	0.003	0.02	TPY
	0.014	0.014	0.014	0.012	0.05	lb/hr
	1.52E-03	1.52E-03	1.52E-03	1.52E-03	1.52E-03	lb/MMBTU
Benzene *	0.002	0.002	0.002	0.002	0.01	TPY
	0.007	0.007	0.007	0.006	0.03	lb/hr
	7.76E-04	7.76E-04	7.76E-04	7.76E-04	7.76E-04	lb/MMBTU
Toluene *	0.001	0.001	0.001	0.001	0.00	TPY
	0.003	0.003	0.003	0.002	0.01	lb/hr
	2.81E-04	2.81E-04	2.81E-04	2.81E-04	2.81E-04	lb/MMBTU
Xylenes *	0.001	0.001	0.001	0.000	0.00	TPY
	0.002	0.002	0.002	0.002	0.01	lb/hr
	1.93E-04	1.93E-04	1.93E-04	1.93E-04	1.93E-04	lb/MMBTU
Formaldehyde *	0.000	0.000	0.000	0.000	0.00	TPY
	0.001	0.001	0.001	0.001	0.00	lb/hr
	7.89E-05	7.89E-05	7.89E-05	7.89E-05	7.89E-05	lb/MMBTU
Acetaldehyde *	0.000	0.000	0.000	0.000	0.00	TPY
	0.000	0.000	0.000	0.000	0.00	lb/hr
	2.52E-05	2.52E-05	2.52E-05	2.52E-05	2.52E-05	lb/MMBTU
Acrolein *	0.000	0.000	0.000	0.000	0.00	TPY
	0.000	0.000	0.000	0.000	0.00	lb/hr
	7.88E-06	7.88E-06	7.88E-06	7.88E-06	7.88E-06	lb/MMBTU
PAH**	0.001	0.001	0.001	0.000	0.00	TPY
	0.002	0.002	0.002	0.002	0.01	lb/hr
	2.12E-04	2.12E-04	2.12E-04	2.12E-04	2.12E-04	lb/MMBTU
Total HAPs	0.00	0.00	0.00	0.00	0.02	TPY

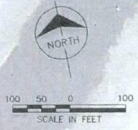
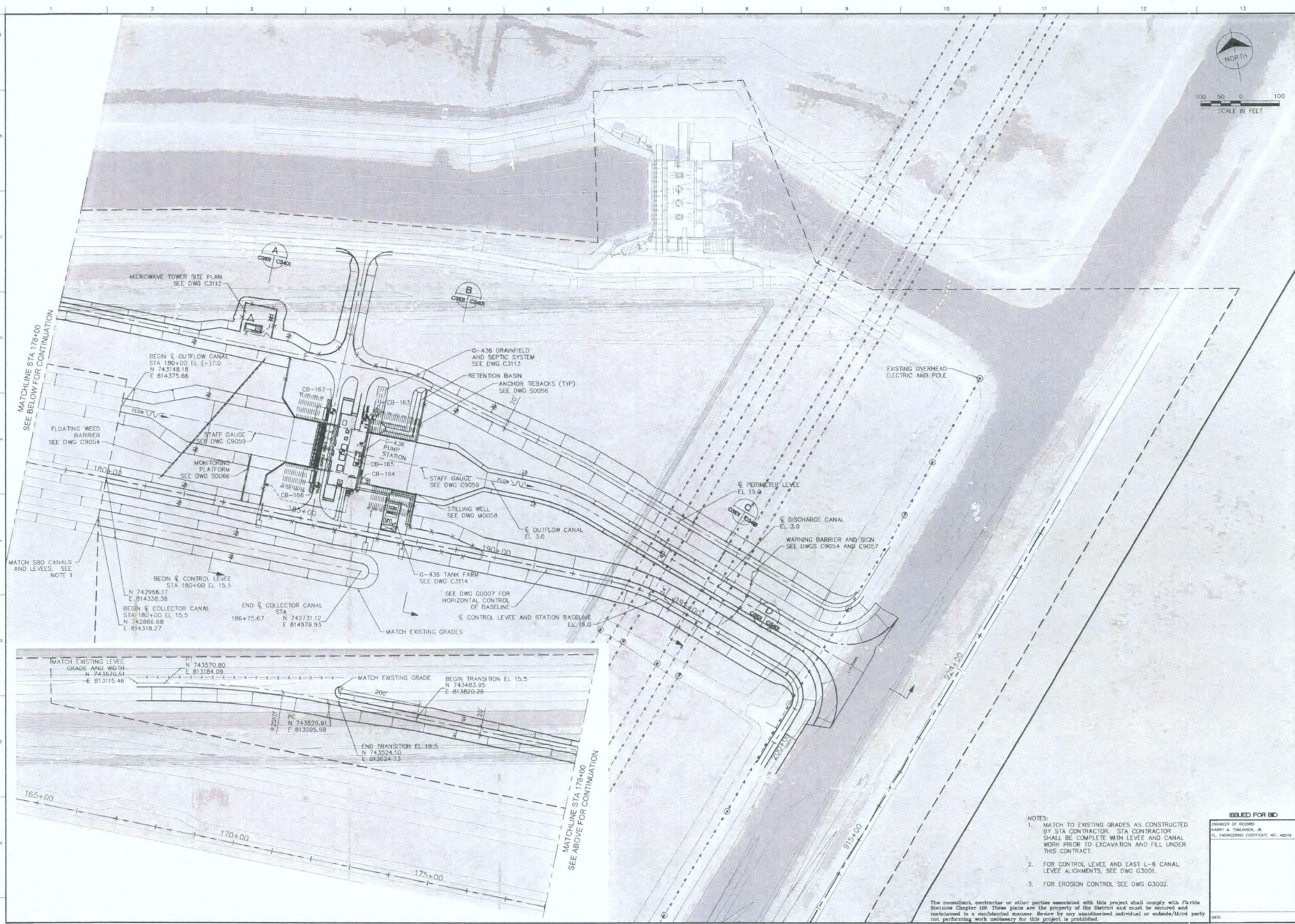
Note: This calculation assumes 100% use of Ultra Low Sulfur No. 2 Distillate Oil (0.0015% sulfur).

* HAP Compounds per Table 3.4-3, AP-42.

** PAH compounds assumed to meet the definition of Polycyclic Organic Matter that is listed as a HAP.

¹ The hours of operations are shown as equal for all pump engines only to facilitate calculating the estimated facility-wide emissions and the resulting

² Heat input in units mMBTU/hr, is calculated based on the reported engine's horsepower and the ratio of input and output emission factors for uncontrolled



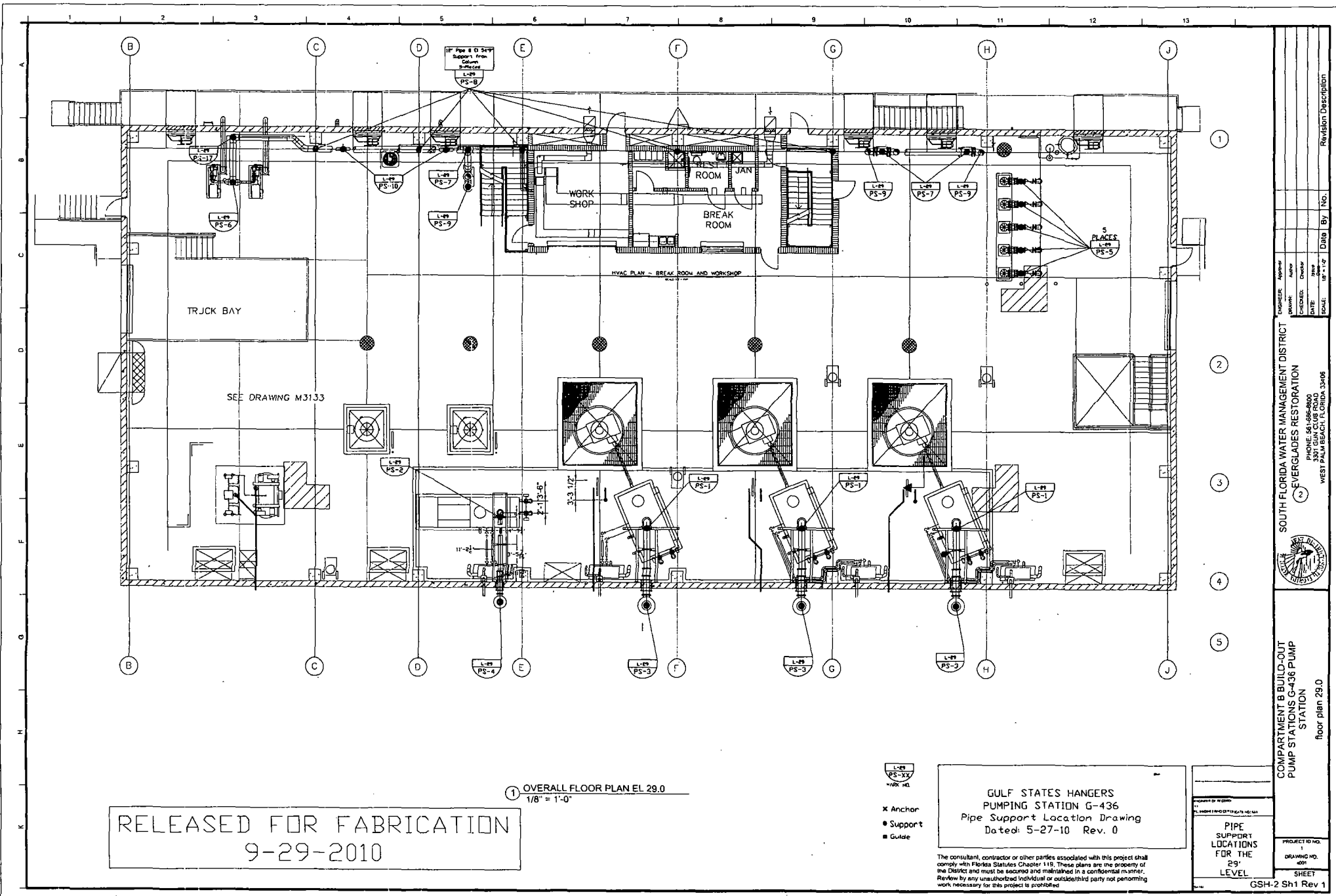
BROWN AND CALDWELL Professional Engineer and Architect 3301 GUN CLUB ROAD WEST PALM BEACH, FLORIDA 33406 PHONE: 561-686-8800 FAX: 561-686-8801 DATE: APR 09 SCALE: AS SHOWN DATE: DRAWING / REVISION DESCRIPTION	
PROJECT NO. B5098	DRAWING NO. G310
SHEET 25 OF 455	

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 EVERGLADES RESTORATION
 COMPARTMENT B BUILD-OUT
 PUMP STATIONS
 G-436 PUMP STATION
 OVERALL SITE PLAN

- NOTES:
- MATCH TO EXISTING GRADES AS CONSTRUCTED BY STA CONTRACTOR. STA CONTRACTOR SHALL BE COMPLETE WITH LEVEE AND CANAL WORK PRIOR TO EXCAVATION AND FILL UNDER THIS CONTRACT.
 - FOR CONTROL LEVEE AND EAST L-6 CANAL LEVEE ALIGNMENTS, SEE DWG G3001.
 - FOR EROSION CONTROL SEE DWG G3002.

ISSUED FOR BID
 DESIGNER OF RECORD:
 HARRY W. THOMPSON, JR.
 P.E. ENGINEERING CERTIFICATE NO. 44241

The consultant, contractor or other parties associated with this project shall comply with Florida Statute Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside third party not performing work necessary for this project is prohibited.



RELEASED FOR FABRICATION
9-29-2010

1 OVERALL FLOOR PLAN EL. 29.0
1/8" = 1'-0"

L-89
PS-XX
ANCHOR

X Anchor
● Support
■ Guide

GULF STATES HANGERS
PUMPING STATION G-436
Pipe Support Location Drawing
Dated: 5-27-10 Rev. 0

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside third party not performing work necessary for this project is prohibited.

PIPE
SUPPORT
LOCATIONS
FOR THE
29'
LEVEL

PROJECT NO. 0001
DRAWING NO. 4001

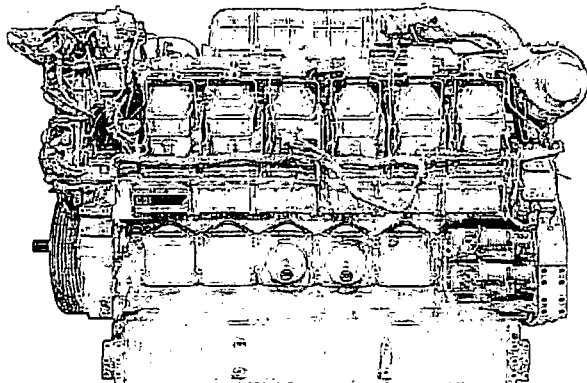
GSH-2 Sh1 Rev 1

Revision Description	Date	By	No.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
EVERGLADES RESTORATION
PHONE: 561-696-8000
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

COMPARTMENT B BUILD-OUT
PUMP STATIONS G-436 PUMP
STATION
Floor plan 29.0

PROJECT NO. 0001
DRAWING NO. 4001
GSH-2 Sh1 Rev 1



CAT® ENGINE SPECIFICATIONS

V-12, 4-Stroke-Cycle-Diesel

Emissions	Not Emissions Certified
Peak Torque at Speed	4376 lb-ft
Bore	170 mm (6.7 in.)
Stroke	190 mm (7.5 in.)
Displacement	51.8 L (3160 cu. in.)
Aspiration	Turbocharged-Aftercooled
Governor and Protection	W3161
Engine Weight, net dry (approx) ..	5203.75 kg (11,462 lb.)
Capacity for Liquids	
Lube Oil System (refill)	318 L (84 U.S. gal.)
Cooling System (engine only) ..	157.1 L (41.5 U.S. gal.)
Cooling System (radiator)	185.1 L (48.9 U.S. gal.)
Oil Change Interval	500 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE No. 00
Flywheel Teeth	183

FEATURES

Engine Design

- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Market-leading power density
- Designed to perform in oilfield conditions, including high ambient high altitude applications
- Long overhaul life proven in oilfield applications
- Core engine components designed for reconditioning and reuse at overhaul

Improved Serviceability

Large inspection openings allow convenient access to core engine internals

Control System

- Woodward 3161 governor
- E-stop pushbutton on instrument panel
- Air shutoff and explosion relief valves
- Extra alarm switches available for customer-supplied panel
- Instrument panel — LH analog display of key package operation parameters

Reduction of Owning and Operating Costs

- Long filter change intervals, aligned with service intervals
- Torsional vibration analysis available from factory to maximize component life

Custom Packaging

For any petroleum application, trust Caterpillar to meet your exact needs with a factory custom package. Cat® engines, generators, enclosures, controls, radiators, transmissions — anything your project requires — can be custom designed and matched to create a one-of-a kind solution. Custom packages are globally supported and are covered by a one-year warranty after startup.

Full Range of Attachments

Large variety of factory installed engine attachments reduces packaging time

Testing

Every engine is full-load tested to ensure proper engine performance.

Product Support Offered Through Global Cat Dealer Network

- More than 2,200 dealer outlets
- Cat factory-trained dealer technicians service every aspect of your petroleum engine
- Cat parts and labor warranty
- Preventive maintenance agreements available for repair-before-failure options
- S•O•SSM program matches your oil and coolant samples against Caterpillar set standards to determine:
 - Internal engine component condition
 - Presence of unwanted fluids
 - Presence of combustion by-products
 - Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience

- Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products.
- Cast engine blocks, heads, cylinder liners, and flywheel housings
- Machine critical components
- Assemble complete engine

Web Site

For all your petroleum power requirements, visit www.catoilandgas.cat.com.

STANDARD EQUIPMENT

Air Inlet System

Aftercooler core — corrosion resistant
Air cleaner — regular duty
(Dry, panel type, with soot filter and service indicators)

Control System

Governor — RH, 3161
Pneumatic control (10 to 60 psi)

Cooling System

Thermostats and housing for conventional core radiator
Jacket water pump — gear-driven, centrifugal

Radiator Cooled Land Based

Outlet controlled thermostat and housing
Jacket water pump — gear-driven

Exhaust System

Exhaust flexible fitting, adapter, flange

Flywheels and Flywheel Housings

Flywheel — SAE No. 00, 183 teeth
Flywheel housing — SAE No. 00

Fuel System

Fuel filter — LH with service indicator
Priming pump — LH, fuel transfer pump
Flexible fuel lines

Instrumentation

Instrument panel — LH
Gauges — engine oil pressure gauge, fuel pressure gauge, oil filter differential gauge, jacket water temperature gauge
Service meter — electric
Exhaust temperature — dual

Lube System

Crankcase breather
Oil cooler
Oil filter — LH service
Oil filler and dipstick — LH service
Oil pan drain valve — 2" NPT female connection

Mounting System

Rails — mounting, floor type, 254 mm (10 in)

Power Take-Offs

Accessory drive — upper RH
Front housing — two-sided

Protection System

Junction box
Manual shutoff — LH
Safety shutoff protection, energized to shutdown
Low oil pressure
Water temperature
Overspeed

Starting System

Air starting motor — RH, 620 to 1034 kPa (90 to 150 psi),
LH control
Air silencer

General

Paint — Cat yellow
Vibration damper and guard
Lifting eyes

OPTIONAL EQUIPMENT

Air Compressor**Air Inlet System**

Air cleaners
Remote air inlet adapters

Charging Systems

Battery chargers and charging alternators

Control System

Load sharing modules
Local speed throttle control
Governor conversion
2301A load sharing governors
2301A speed control governor and actuator
3161 mechanical governors
Throttle position sensors

Cooling Systems

High gloss black folded core radiators and conventional core radiators
Belt guard
Blower fan
Fan drive and fan pulley
Radiator cover
Water level switch gauge
Coolant level sensors
Air separator

Exhaust System

Flexible fitting, elbows
Flange and exhaust expanders
Mufflers

Flywheel and Flywheel Housing**Fuel System**

Fuel priming pumps, flexible fuel lines
Fuel filter — primary
Fuel cooler, fuel level switch

Instrumentation

Gauges and instrument panels

Lube System

Fumes disposal
Oil filters
Oil pan accessories
Pre-lube pumps, sump pumps

Power Take-Offs

Flexible couplings, coupling hubs
Front accessory drives
Auxiliary drive shafts and pulleys
Front stub shaft and flywheel stub shaft
Pulleys

Protection System

Shutoffs
Switches and contactors
Explosion relief valves
Oil pressure monitor

Starting System

Starting motors — air, gas, electric
Air pressure regulators, controls, and silencer
Air controls — manual, electric
Redundant start systems
Start switch
Starting aids (JW heater and ether injection)
Battery sets — 24 volts with rack

General

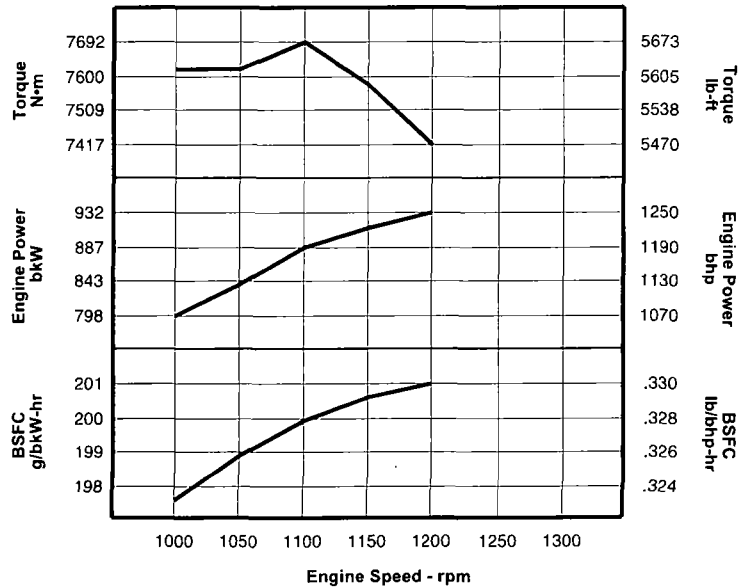
Flywheel guard
Special paint

PERFORMANCE CURVES*

Turbocharged-Aftercooled

P/D MECH Rating — 932 bkW (1250 bhp) @ 1200 rpm

DM2016-03

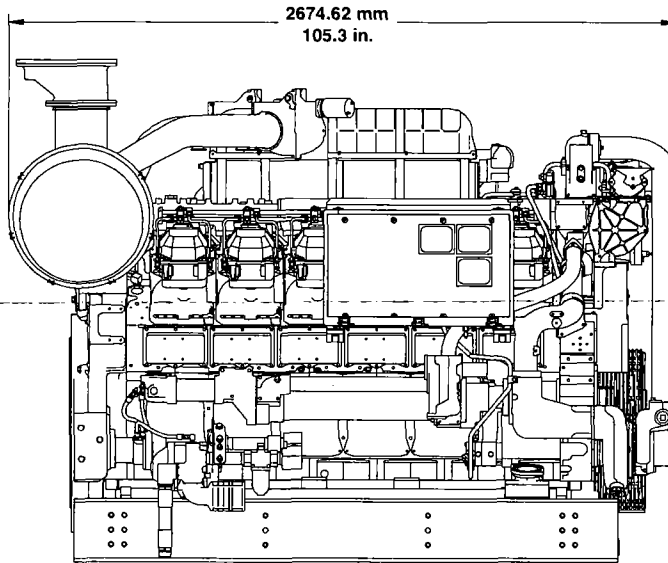


Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1200	932.0	1249.8	532	30255	107	6085	808	45951	145	8246
1150	912.6	1223.8	518	29459	106	6028	769	43733	134	7621
1100	886.1	1188.3	499	28378	105	5971	731	41572	120	6824
1050	837.9	1123.6	475	27013	103	5858	695	39525	104	5914
1000	798.0	1070.1	446	25364	101	5744	662	37648	86	4891

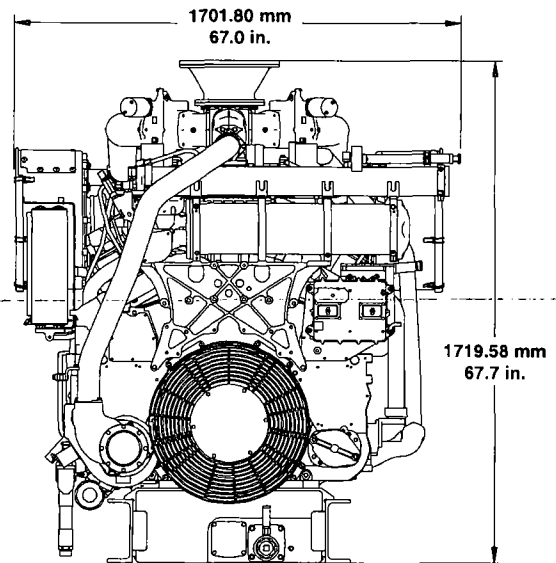
Approximate Power (bhp) as function of Altitude and Inlet Manifold Temperature for DM2016-03										
Inlet Manifold Temp. (°F)	Altitude (feet)									
	10,499	9843	8202	6562	4921	3281	1640	984	0	0
50	1051	1078	1148	1222	1250	1250	1250	1250	1250	1250
68	1015	1041	1109	1180	1250	1250	1250	1250	1250	1250
86	982	1007	1073	1141	1214	1250	1250	1250	1250	1250
104	951	975	1038	1105	1175	1250	1250	1250	1250	1250
122	921	944	1006	1070	1139	1211	1250	1250	1250	1250
Normal	1053	1074	1132	1191	1250	1250	1250	1250	1250	1250

*Other ratings and performance data available.

LAND MECHANICAL ENGINE



Right Side View



Front View

Engine Dimensions		
Length	2674.62 mm	105.3 in.
Width	1701.80 mm	67.0 in.
Height	1719.58 mm	67.7 in.
Engine Weight (dry)	5203.75 kg	11,462 lb.

Note: Do not use for installation design.
See general dimension drawings for detail.
(Drawing #281-9127)

RATING DEFINITIONS AND CONDITIONS

Prime Power — 6,000 hrs./year, for applications with load factors less than or equal to 60%. Rated load (100%) usage is limited to 1 hour in 12. 10% overload available.

Ratings are based on SAE J1995 standard conditions of 100 kPa (29.61 in Hg) and 25° C (77° F). These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions of 100 kPa (29.61 in Hg), 27° C (81° F), and 60% relative humidity. Ratings are valid for air cleaner inlet temperatures up to and including 50° C (122° F).

Fuel consumption has a tolerance of +5% and is based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18 390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal). Fuel consumption shown with all oil, fuel, and water pumps, engine driven.

Information contained in this publication may be considered confidential. Discretion is recommended when distributing. Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, S•O•S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

DIESEL ENGINE-GENERATOR SET 650-XC6DT2

⇒ 650 kWe / 60 Hz / Standby
615 kWe / 60 Hz / Prime
208 - 4160V



SYSTEM RATINGS

Standby

Voltage (L-L)	208V**	240V**	480V**	600V**	4160V
Phase	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
kW	650	650	650	650	650
kVA	812.5	812.5	812.5	812.5	812.5
AMPS	2255	1955	977	782	113
skVA@30% Voltage Dip	1750	1750	1750	1350	1850
Generator Model*	573RSL4033	573RSL4033	573RSL4033	573RSS4274	574FSM4358
Temp Rise	130°C/27°C	130°C/27°C	130°C/27°C	125°C/40°C	130°C/27°C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE


Prime

Voltage (L-L)	208V	240V	480V	600V	4160V
Phase	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
kW	615	615	615	615	615
kVA	768.75	768.75	768.75	768.75	768.75
AMPS	2134	1849	925	740	107
skVA@30% Voltage Dip	1750	1750	1750	1350	1850
Generator Model*	573RSL4033	573RSL4033	573RSL4033	573RSS4274	574FSM4358
Temp Rise	105°C/40°C	105°C/40°C	105°C/40°C	105°C/40°C	105°C/40°C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL2200 Offered

- / EPA Tier 2 Certified
- / Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- / UL2200, CSA Listing Offered
- / Accepts Rated Load in One Step Per NFPA 110
- / All engine-generator sets are prototype and factory tested
- / MTU Onsite Energy is a single source supplier
- / Global Product Support
- / 2 Year Standard Warranty
- / 12V 2000 Diesel Engine
 - 23.9 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
- / Complete Range of Accessories

- / Permanent Magnet Generator (PMG)
 - Brushless, Rotating Field
 - 300% Short Circuit Capability
 - 2/3 Pitch Windings
 - Standard for 570 frame and larger
 - Optional for 430 frame and smaller
- / Digital Control Panel(s)
 - UL Recognized, , NFPA 110
 - Complete System Metering
 - LCD Display
- / Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

/ Engine


Air Cleaners
 Oil Pump
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Exhaust Manifold – Dry
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor – Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130°C Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 → 100% of Rated Load - One Step IAW NFPA 110, Level 1, Type 10
 3% Maximum Harmonic Content

/ Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to our RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 7 Contact Outputs
 UL Recognized, , CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Level Compatible

Engine

Manufacturer	MTU
Model	12V 2000 G45TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: Standby: kWm (bhp)	780 (1,046)
Maximum Power: Prime: kWm (bhp)	710 (952)
Speed Regulation	±0.25%
Air Cleaner	Dry

Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	274 (72.4)

Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8°C (0°F)	1,750

Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480 (127)

Fuel Consumption

	STANDBY	PRIME
At 100% of Power Rating: L/hr (gal/hr)	192.7 (50.9)	176 (46.5)
At 75% of Power Rating: L/hr (gal/hr)	145 (38.3)	132.9 (35.1)
At 50% of Power Rating: L/hr (gal/hr)	98.4 (26)	90.5 (23.9)

Cooling - Radiator System

	STANDBY	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	270 (15,354)	245 (13,932)
Heat Rejection to After Cooler: kW (BTUM)	235 (13,364)	215 (12,226)
Heat Radiated to Ambient: kW (BTUM)	76.4 (4,345)	73.1 (4,157)

Air Requirements

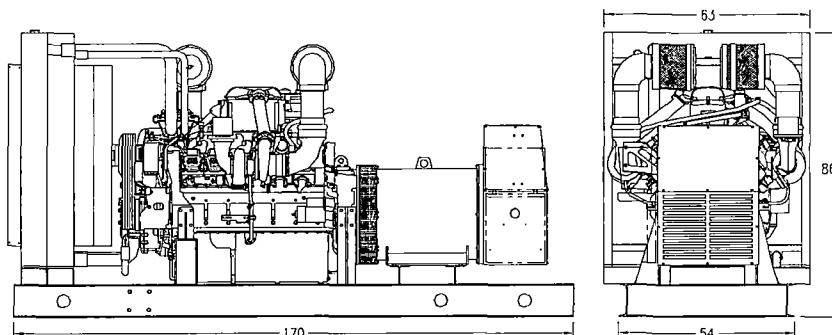
	STANDBY	PRIME
Aspirating: *m ³ /min (SCFM)	63 (2,225)	60 (2,119)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,132 (39,977)	1,132 (39,977)
Air Flow Required for Heat Exchanger/Remote Rad. based on 25°F Rise: *m ³ /min (SCFM)	277 (9,798)	265 (9,375)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

Exhaust System

	STANDBY	PRIME
Gas Temp. (Stack): °C (°F)	550 (1,022)	535 (995)
Gas Volume at Stack Temp: m ³ /min (CFM)	159 (5,615)	150 (5,297)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (LxWxH)	Weight (less tank)
OPU	4,320 x 1,600 x 2,200 mm (170 x 63 x 86.5 in)	5,492 kg (12,108 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load	Standby No Load	Prime Full Load	Prime No Load
OPU w/ Critical Grade Muffler (dBA)	99.5	92	98	92
Sound Attenuated Enclosure (dBA)	91.5	84	90	84

Sound data is provided at 7 m (23 ft).

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.31	0.87	0.084

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

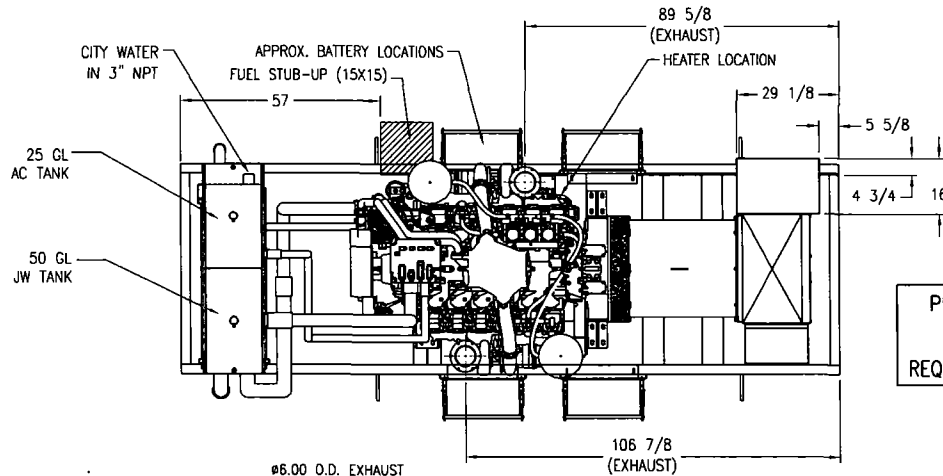
RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271.
- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory.
- // Deration Factor:
 - Altitude:** Derate 0.8% per 100 m (328 ft) above 2,400 m (7,874 ft) at 25°C (77°F). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
 - Temperature:** No temperature derate up to 50°C (122°F) at 100 m (328 ft).

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

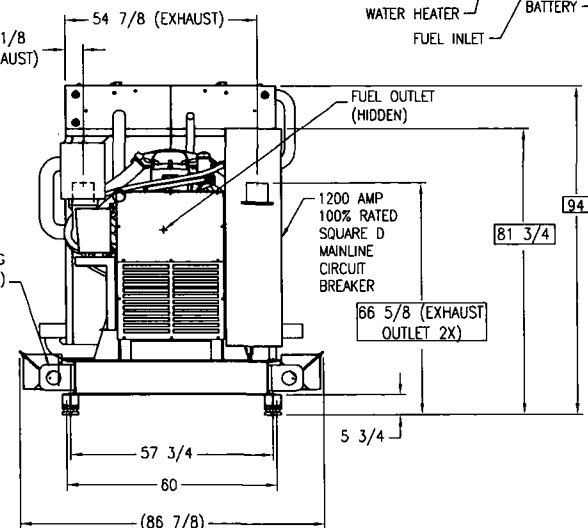
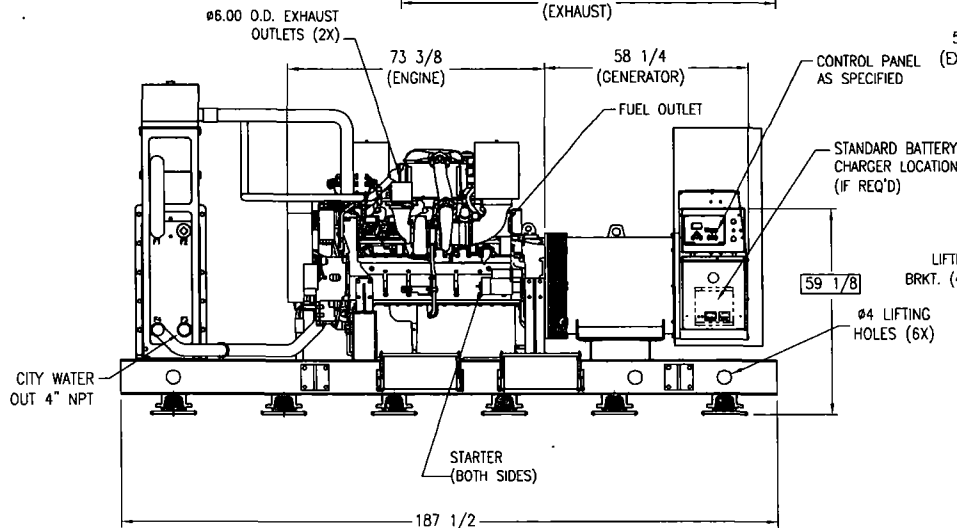
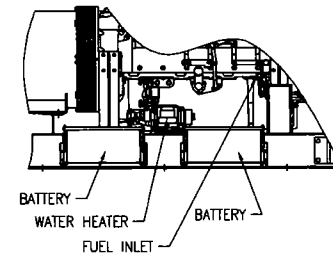
DWG. #: 650RXC6DT2(R1238A39)OPU-MX-231



NOTES:

1. SUB-BASE FUEL TANK INFORMATION:
OVERALL HEIGHT OF UNIT WILL INCREASE WITH USE OF OPTIONAL SUB-BASE FUEL TANK. REFERENCE SALES CATALOG FOR TANK HEIGHT AND GALLON CAPACITY INFORMATION.
2. FUEL SYSTEM CONNECTIONS:
(FOR UNITS WITHOUT SUB-BASE FUEL TANKS)
INLET: 3/8 NPT OUTLET: 3/8 NPT
3. [BOXED] DIMENSIONS MAY VARY DUE TO SPRING COMPRESSION.

PRELIMINARY DRAWING - NOT INTENDED FOR CONSTRUCTION PURPOSES DUE TO POSSIBLE CHANGES REQUIRED DURING THE SUBMITTAL PROCESS



DRAWING TOLERANCES: ±1/4"
EXCEPT BASE MTC. HOLES: ±1/8"

REVISION	DATE	REVISION DESCRIPTION	INITIALS
A	5-11-10	SUBMITTAL	AEF



THIS DRAWING IS THE PROPERTY OF ON SITE ENERGY CORPORATION AND SHALL BE USED ONLY IN CONNECTION WITH THE SPECIFIC EQUIPMENT IDENTIFIED THEREIN. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF ON SITE ENERGY CORPORATION.

GEN-SET INFORMATION

ENGINE: R1238A39
GENERATOR: 573 RSL
RADIATOR: N/A
RADIATOR AMBIENT: 50C
DUCT FLANGE: 105-4313
CONTROL PANEL: DCC 2020
BASE: TBD

ENCLOSURE: NA
BREAKER: 1200 AMP
TANK: NA
MUFFLER: NA
TRAILER: NA
ISOLATORS: TJE

DIMENSIONAL LAYOUT

DRAWN TO SCALE
ALL DIMENSIONS ARE IN INCHES
DATE: 5-11-10
MODEL: 650RXC6DT2
DRAWN BY: AEF

DWG. #: 650RXC6DT2(R1238A39)OPU-MX-231



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

ADM 38-40

February 16, 2012

Florida Dept. of Environmental Protection - Receipts
P.O. Box 3070
Tallahassee, FL 32315-3070

**Subject: Air General Permit Registration Form
South Florida Water Management District**

Enclosed please find Air General Permit Registration Form (DEP Form No. 62-210.920(1)(b)) and fee for the South Florida Water Management District's Pump Stations G-434, G-436 and G-508. These are initial notifications for each facility.

Please contact me at 561/682-2516 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey A. Smith".

Jeffrey A. Smith
Lead Environmental Scientist
Infrastructure Maintenance Section
Operations, Maintenance & Construction Division

c: District O/M file (w/ enclosure)



MS 5802
**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT**
3301 Gun Club Road
P.O. Box 24680
West Palm Beach, Florida 33416-4680



*Florida Dept. of Env. Protection - Receipts
P.O. Box 3070
Tallahassee, FL 32315-3070*