

Statement of Basis

**Permit to Construct No. P-2013.0059
Project ID 61495**

**Northwest Gas Processing (NWGP), LLC
New Plymouth, Idaho**

Facility ID 075-00021

Final

**April 10, 2015
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Permit Writer**

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The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
Bbl	barrel
Bhp	brake horsepower
BMP	best management practices
Btu	British thermal units
CAA	Clean Air Act
CEMS	continuous emission monitoring systems
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	CO ₂ equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSCR	non-selective catalytic reduction
NSPS	New Source Performance Standards
O&M	operation and maintenance
O ₂	oxygen
PC	permit condition
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
RICE	reciprocating internal combustion engines
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet

SCL	significant contribution limits
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
THC	total hydrocarbon
U.S.C.	United States Code
VOC	volatile organic compounds
VRU	vapor recovery unit
µg/m ³	micrograms per cubic meter

FACILITY INFORMATION

Description

Northwest Gas Processing, LLC (NWGP) operates a natural gas and hydrocarbon treatment facility called the NWGP Highway 30 Treating Facility located in New Plymouth. The facility processes raw natural gas and natural gas condensate for delivery to a nearby Williams Northwest natural gas transmission pipeline for transport to market.

Raw field gas enters the plant through a gathering line and ball receiver. Liquids are separated from the gas in the Slug Catcher, and level controlled through a level control valve where they are pressured to a storage tank. The gas vapor leaving passes through a pressure control valve which prevents the pressure from exceeding 575 psig. It next enters the Gas to Gas Exchanger where the gas is cooled to 17 F and then to the Gas Chiller, where the gas is further cooled to -20 F using propane refrigerant. The gas is separated from the condensed natural gas liquids in the Cold Separator, and then delivered to shell side of the Gas to Gas Exchanger and consequently warmed to 50 F. This gas is approximately 95% of the inlet gas and is compressed to pipeline pressure (maximum 850 psig) by a compressor. The compressor is driven by a natural gas powered Caterpillar G398 TA richburn engine equipped with an emit catalytic oxidizer. There is a 0.2 MMBtu Engine heater which is also natural gas fired which can be used to warm the engine prior to start-up. The gas then passes through a Filter/Separator to remove particles, oil mist, etc. prior to delivery to Northwest Pipeline.

Liquids from the cold separator flow to the Gas/Liquid Exchanger, where they are warmed to 31 F. The flow is level controlled by a level control valve prior to entering the Glycol Separator. The Glycol Separator is a three phase separator and separates gas, natural gas liquids NGL(s), and glycol. The NGL(s) enter the top of the 10 tray stabilizer and trickle down through the trays. The bottom section of the stabilizer diverts the NGL(s) to the Reboiler, where indirect heat warms the NGL(s) to 180 F. This reboiler (Stabilizer Reboiler Heater) is a 1.2 MMBtu natural gas fired unit which vaporizes the ethane and lighter components which travel from tray to tray up the tower warming the incoming NGL(s) and cooling the gas. The gas leaving the stabilizer is ethane rich and is recompressed back to the plant inlet.

The NGL is cooled in an air cooled heat exchanger, as it passes to the storage tank. All vapors are combined and recompressed to the plant inlet for recycling. The fourth throw of the refrigeration compressor is powered by a 250 hp electric motor.

Ethylene glycol is injected in the gas to gas exchanger and the chiller to inhibit hydrate formation as the inlet gas is cooled. The glycol travels through a series of exchangers and separators where it is separated by gravity from the NGL(s). Glycol exits the glycol separator and travels to a heat exchanger where it is warmed to 100 F by exchange with the hot glycol from the reboiler. This conserves energy and reduces viscosity for improved operation of the glycol filter. The glycol filter has a spun element and removes particles in the glycol 25 micron and larger. The filter is equipped with an air eliminator to remove vapor and maximize the filtration area.

The warm glycol then flows to the top of the packed section of the glycol reboiler where it acts as reflux for the steam generated in the reboiler to minimize glycol vaporization losses. The glycol is heated in two reboilers by a 0.75 MMBtu per hour direct natural gas fired tube. By operating the reboilers at 235 to 240 F the glycol will maintain a concentration in the 75% range.

Hot glycol from the reboiler accumulates in the surge tank end of the reboiler and then flows to the shell side of the glycol exchanger where it cools to ambient temperature for suction to the glycol pump. The glycol pump is an electric motor driven plunger type which can boost the glycol up to 1000 psig if necessary. Glycol leaving the pump flows to the injection nozzles which are each sized for 1 gpm a 50 psi differential pressure. The nozzles are inserted into the exchangers with removable holders. Operating under the proper conditions the glycol should be evenly distributed across the face of each tubesheet.

The refrigeration is provided in a typical propane/kettle type system. The compressor lowers the pressure of the kettle thereby lowering the temperature of the bath. Propane from the kettle is compressed to 240 psig by a two stage compressor which is equipped with normal operating and shutdown devices. Propane from compressor discharge is condensed with an aerial electric fan driven cooler. The cooler outlet liquids flow to the propane accumulator.

Propane leaves the accumulator and flows to the liquid/liquid exchanger where it is further cooled by the cold NGL(s). A liquid level control valve maintains the propane level in the chiller.

The propane compressor is driven by a 250 HP electric motor. Fluctuations in the refrigeration load are controlled with a hot gas bypass from compressor discharge to the chiller propane inlet thereby maintaining a minimum suction pressure for the compressor.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

July 11, 2014	P-2013.0059, Initial permit to construct, Permit status (S)
October 27, 2014	P-2013.0059, PTC revision to remove one compressor engine, install one condensate heater and a series of ten condensate storage tanks, and install an emergency flare, Permit status (S)
February 5, 2015	P-2013.0059, PTC revision to install and operate an additional rebioler, condensate heater, and emergency flare, Permit status (A, but will become S upon issuance of this permit)

Application Scope

This PTC is a revision of an existing PTC for a facility name change.

Application Chronology

March 26, 2015	DEQ received an application.
April 10, 2015	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment
Compressor Engine ENG1	Manufacturer: Caterpillar Model: G398 TA HCR Manufacture Date: 4/5/1990 Max. capacity: 610 bhp Fuel: Natural Gas	NSCR
(2) Reboilers RBLR-HTR1 & 2	Rated capacity: 0.75 MMBtu/hr Fuel: Natural Gas	None
Stabilizer Reboiler Heater STBL-HTR1	Rated capacity: 1.2 MMBtu/hr Fuel: Natural Gas	None
Engine Heater ENG-HTR1	Rated capacity: 0.2 MMBtu/hr Fuel: Natural Gas	None
(2) Condensate Heaters COND-HTR1 & 2	Rated capacity: 1.5 MMBtu/hr Fuel: Natural Gas	None
(2) Emergency Flares FLR1 & 2	Manufacturer: Flare Industries Model: 850 Throughput: 1750 scf/day	None (considered an emission control device during an emergency situation)
10 Condensate Storage Tanks VENTK	Throughput: 1800 bbl/day Fuel: Crude Oil RVP 10	VRU System Control Efficiency 98.0%
Tank Truck Loading LUI	Throughput: 1800 bbl/day 5000 gal/hr	VRU System Control Efficiency 98.0%

Emissions Inventories

This permitting action is for a facility name change. Emissions inventories are not required.

Ambient Air Quality Impact Analyses

This permitting action is for a facility name change. Ambient air quality impact analyses are not required.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Payette County, which is designated as attainment or unclassifiable for PM_{2.5}, PM₁₀, SO₂, NO₂, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The facility is classified as a minor facility because the facility's potential to emit is less than major source thresholds without requiring limits on its potential to emit.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for a facility name change. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 Visible Emissions

The sources of PM₁₀ emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.4 and 3.3.

Standards for New Sources (IDAPA 58.01.01.676)

IDAPA 58.01.01.676 Standards for New Sources

The fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. This requirement is assured by Permit Condition 2.3.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

The facility is a minor source and is not a Tier I source in accordance with IDAPA 58.01.01.006; the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

The facility remains subject to the requirements of 40 CFR 60 Subpart OOOO – Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution. For a breakdown of the subpart, please refer to the Statement of Basis issued July 11, 2014.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

The facility remains subject to the requirements of 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. For a breakdown of the subpart, please refer to the Statement of Basis issued July 11, 2014.

Permit Conditions Review

This section describes the permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Permit condition 2.1 was changed to show the facility name as NWGP Highway 30 Treating Facility.

Permit condition 3.1 was changed to show the facility name as NWGP Highway 30 Treating Facility.

PUBLIC REVIEW

Public Comment Opportunity

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04 or IDAPA 58.01.01.404.04.